Commerce

SOUTHERN TEXTILE BULLETIN

VOLUME 25 CHARLOTTE, N. C., THURSDAY, NOVEMBER 8, 1923. NUMBER 11

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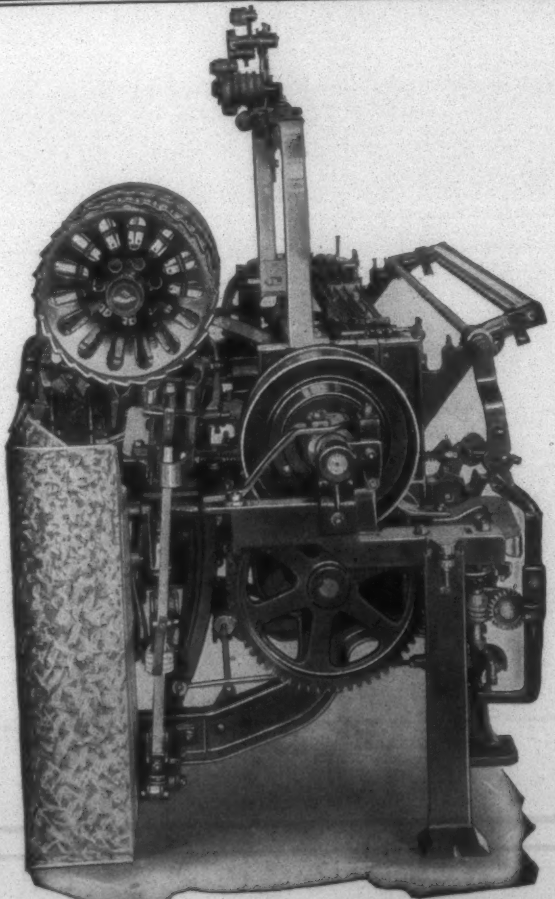

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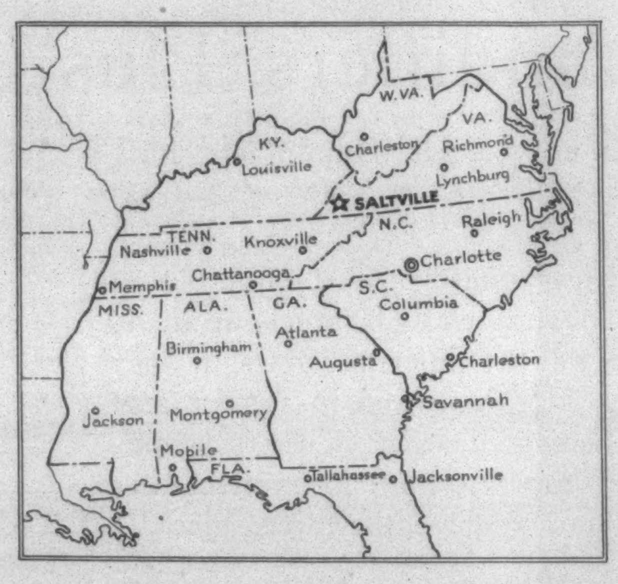

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We engaged a departmental production manager who had formerly worked for another oil manufacturer. He claimed that our cost of a certain product was higher than the cost at his former place.

We investigated and we found that the difference in the cost was in the cost of the tallow. But in spite of our higher cost and correspondingly higher selling price it was a well known fact that we were selling more of the product. We credited this to the fact that our product was superior in quality. But nevertheless we could not accommodate ourselves to paying a higher price for tallow, particularly as we were by far the larger quantity buyer.

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There is sold throughout the country, "job lots of oils," which for the most part have no particular identity. They are always sold at a cut price and usually by brokers.

There is always a tale which goes with these job lots. "They are represented to be of the best quality, but the manufacturer has his tanks full and wants to dispose of this lot so as to make room in his tanks for oil that is in process of manufacture." "The manufacturer is hard pressed for ready cash and desires to turn this limited amount into cash." "The manufacturer made an error and ran a little of black oil into the tank which accounts for the oil being a little off color, otherwise the oil is all right."

These are all stock arguments made to catch the ignorant. The oils respond to the necessary laboratory tests, but laboratory tests in themselves mean nothing, if the raw material from which the oil is manufactured and the process of manufacture are not known.

In this manner Asphaltum Base Oils are palmed off as paraffine base oils; slaughter house grease oils are palmed off as lard oils; mustard seed or rape seed compounds as pure neatsfoot oil; paraffine compounds as stearine; and so on without end.

E. F. Houghton & Co. has been in business eight years more than a half-century and in all that time they have never purchased a single job lot of oil.

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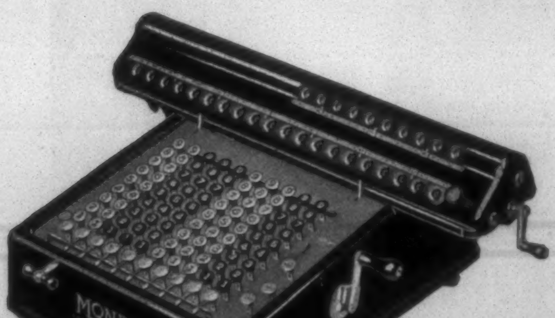

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SOUTHERN
TEXTILE BULLETIN

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VOLUME 25 CHARLOTTE, N. C., THURSDAY, NOVEMBER 8, 1923. NUMBER 11

Properties of Raw Cotton

Botanical Considerations.

Development. Everyone is familiar with the fact that a sample of raw cotton represents a mass of hairs which have grown from the seed of the cotton plant, according to an article in The Textile Recorder, of Manchester, England, by Dr. J. C. Withers, of the British Cotton Industry Research Association. These hairs begin to develop as small protuberances from individual cells in the coating of the seed. Almost at once the hair reaches its full width, but grows longer and longer, until at the end of 25 days it has reached its full length. The vital organ, the nucleus, keeps near the tip of the cell, which is constantly supplied by the food material of the plant, just as any other actively growing cell. There is also evidence that the growth, that is, elongation, slows down at night and is more active by day. At the end of about 25 days, then, the hair is a living cell, with a very thin wall. Now, for some time, the food supplied by the plant is laid down in concentric layers, as a secondary thickening to the walls. At last the boll bursts and exposes the living cells to the sun, so that the sap inside them dries up, and the cells collapse inwards and die. It must be emphasized, therefore, that a single filament of cotton is a "hair" in the botanical sense, since it is a specially developed, single cell of the skin.

Structure of the Hair. When seen under the microscope a single cotton hair appears like a rubber tube which has flattened, through evacuation, and got twisted. It is by no means easy to cut cross sections of the hair so as to see what shape they are, for they are nearly as tough as steel. The average hair, however, approximates in cross section to a figure with parallel straight sides and semi-circular ends, with a hollow in the center. The longer dimension is conveniently called the "ribbon width" of the cotton, and it is most remarkable how small this is compared with the length. In Sea Island cotton the hairs are about four thousand times as long as broad, whereas individual flax fibres are only about 12 hundred times their width. Botanists and chemists generally distinguish in the hairs three main structures—the thin outside layer, called the cuticle, the secondary thickening of cellulose, and the central canal of lumen.

(1) The Cuticle. It is interesting that this structure was recognized as long ago as 1816 by an anonymous Lancashire writer, who said in language which is roughly true today: "Whoever will examine the finest cotton fibre with a glass will find it enclosed in a coat as compact as the stubborn oak is enclosed within its bark, and if that coat is broken into it will produce a roughness along the fibre, and its strength will be greatly diminished." The enormous strength of the cuticle has been demonstrated quite recently by Dr. R. S. Willows, who has found that a solution of caustic soda of 30 deg. Tw. is not strong enough to wreck the cuticle, whilst able to effect a greater swelling in the cellulose inside. Slices of cotton hair when treated in this way appear under the microscope like dumb-bells, through the swollen cellulose squeezing out at the ends of the tube formed by the cuticle.

(2) The secondary thickening is almost entirely composed of a single chemical material, cellulose. This is deposited in layers which can be distinguished and even counted, after first causing the hair to swell by means of caustic soda. According to Dr. W. L. Balls, these various rings mark separate daily deposits.

(3) The lumen contains the remains of the vital parts of the cell and includes, therefore, proteins and pigments. This is of great importance, for such material acts as food to the bacteria and moulds which are a constant menace to cotton in storage. In fact, the most vulnerable point of the cotton hair is the lumen, which may be reached by the micro-organisms through the open ends or through cracks in the walls.

Unusual Features of the Hair. As far as plant hairs go, cotton hairs may be regarded as fairly representative, but they possess some important abnormalities. Firstly, the ratio of length to breadth is extraordinary, as was mentioned above. Then the walls are commonly found to have slits in them, usually passing from the center outwards. These slits or crevices are probably due to the fact that the cotton boll is not large enough to accommodate the hairs on the seeds without doubling and redoubling them. When the secondary layers are deposited the sharp bends in the hairs will develop "kinks" and these will suffer considerable strain when the boll opens and the hairs dry out more or less straight. Obviously, these cracks must greatly weaken the cotton. Finally, the most important feature is the spiral construction of the hair. A host of plants for example—thistles—produce hairs, some even longer than cotton hairs, but in the absence of convolutions, i. e., the spiral structure, they cannot be used for spinning. Indian cottons have about 150 convolutions per inch, and Sea Island cotton about 300.

Abnormal Hairs. It is unfortunately common to find in a sample of cotton some hairs with very thin walls. These hairs are usually called "dead," but as all cotton has ceased to live soon after the boll opens, a better term is required. Obviously, these thin-walled hairs are immature in the sense that the secondary deposit has been a failure. Unfortunately, also, tufts of immature hairs are met with even on well-developed seeds, besides in damaged and unripe bolls. These immature hairs constitute one of the chief banes to the spinner and dyer. Right from the process of ginning they exhibit a tendency to coil up and enclose other hairs in the familiar tangles known as neps. On the other hand, it is not uncommon to find hairs which have very thick walls and only a small lumen. Such hairs are usually cylindrical instead of ribbon-like, and smooth instead of convoluted, and thus have little value in spinning.

Chemical Constituents of Raw Cotton.

The first real enquiry into the chemical nature of the compounds of raw cotton was made by Professor Schunck, of Manchester, in 1868. A good deal has been published on the subject since then, and a summary of the information is available in a report issued by the Shirley Institute, but there is a very wide scope for further investigations. It is commonly understood that the material consists to the extent of 90 to 91 per cent of cellulose, about 0.5 to 1 per cent of wax, about 0.2 per cent of mineral matter and about 8 per cent of water. The minor ingredients, although insignificant in quantity, undoubtedly have an enormous interest in practice. The mineral matter, of course, gets into the hair from the food material supplied by the roots of the plant, and the quantity depends on the nature of the soil and the species of the cotton. One of the mineral constituents which is easily estimated is phosphorus, this being present in a state of chemical combination mostly as phosphates. The amount of phosphorus seems to be consistently about twice as much in the Egyptian strains of cotton as in American, no matter where the cotton is grown, which is an interesting fact. Moreover, samples taken at random from a bale usually show considerable difference in phosphorus content, owing to the mixing together of cotton from different farms at the ginners, but as the cotton proceeds from one opening process to another it will be found to approach uniformity in the percentage of phosphorus very soon, thus showing how efficient is blending action of the machines. The mineral matter does not seem to have much interest in mill operations, but it must certainly be taken into account in our theories. It is just possible, for example, that this very small constituent of cotton plays an important part in the fixation of certain classes of dyes.

Cotton wax is a most important constituent of the cuticle of cotton, and we are now able to say what it consists of, and to show at the Shirley Institute a wide array of its ingredients. The wax is interesting to a great many branches of the industry. It is generally assumed that the mill has to be warm enough for the wax to become pliant if spinning is to be at all successful, and certainly it is not easy to spin cotton which has first been "dry cleaned" and so deprived of wax. Then, it makes raw cotton difficult to wet, so that it floats in water for some time, whereas extracted cotton sinks rapidly. The wax is also of great interest to the bleacher, for a considerable part of his work is to remove it. Now, scouring agents are mainly of two kinds, those which emulsify and those which saponify. In deciding, therefore, which group of scouring agents is most suitable for the removal of cotton wax it becomes important to find whether the ingredients are mainly of a nature which responds best to one method or the other. We have found that the chief constituents are not fat-like substances which respond to saponification, but complex alcohols. Consequently, scouring is best assisted by emulsifying agents, or indeed by "dry cleaning." Finally, the wax is important in beetling, for very small quantities are a great hindrance to getting a good finish.

Pectic Matter.. It is generally assumed that cotton contains a small

(Continued on Page 31)

Address of the President

(Robert Amory, Amory, Browne & Co., Boston, Mass., before National Association of Cotton Manufacturers.)

"Forasmuch as men, who have but an ill opinion of their own concernments, instead of being (as some think) the more industrious to resist the evils they apprehend, do contrariwise become the more lanquid and ineffectual in all their endeavors, neither caring to attempt or prosecute even the probable means of their relief. Upon this consideration, as a member of the Commonwealth, next to knowing the precise truth in what condition the common interest stands, I would in all doubtful cases think the best, and consequently not despair, without string and manifest reasons, carefully examining whatever tends to lessen my hopes of the public welfare.

"I have therefore thought fit to examine the following persuasions, which I find too current in the world, and too much to have affected the minds of some, to the prejudice of all, viz.

"That there is no trade nor employment for the people, that taxes have been many and great, that trade in general doth lamentably decay, the Southerners grow too fast upon us, with many other dismal suggestions, which I had rather stifle than repeat.

"'Tis true, too many matters have been regulated by laws, which nature, long custom, and general consent, ought only to have governed. But notwithstanding all this (the like whereof was always in all places), the buildings of Boston grow great and glorious; those, who can give good security, may have money under the statute-interest; the exchange seems as full of merchants as formerly; no more beggars in the streets than heretofore; the number of automobiles exceeding former times; the theatres very magnificent; much land has been improved; and the price of food reasonable; and, in brief, no man needs to want that will take moderate pains. That some are poorer than others, ever was and ever will be; and that many are naturally querulous and envious, is an evil as old as the world."

These general observations, and that men eat, and drink, and laugh as they use to do, have encouraged me to try if I could also comfort others, being satisfied myself, that the interest and affairs of New England are in no deplorable condition.

The foregoing is a quotation from the economic writing of Sir W. Petty, written about 250 years ago in England. The only changes, which I have made, are the substitution of the words "Southerners" for "French," "Boston" for "London," "automobiles" for "coaches," and "New England" for "England." Yet, except for the quaintness of language, it might well have been written about New England today.

It is well at this time that we should consider carefully and soberly the situation in New England and especially in Massachusetts with regard to our industry. The past year and a half has been a period almost of panic in New England cotton mills. Mill managements, stockholders, and a growing and thoughtful part of our general public have been deeply concerned over their future. The members of this Association are responsible for the operation of our mills. If these mills can be operated successfully and profitably we can depend on a continued flow of new capital from the thrifty and saving people of New England. This new capital will enable enlargements and new mills which will, in turn, give employment and bring prosperity to towns and cities where they are built.

Let us examine the facts; for the past year and a half there has been practically no new construction. There has not even been sufficient replacement of new machinery to take care of that worn-out. During no part of this whole year and a half has Massachusetts operated over 91 per cent of her full single-shift production. Other sections of the country, such as the Carolinas, have operated full time and over time. For the last two months, for which figures are available, Massachusetts ran 66 per cent and Carolinas 121 per cent. The figures are taken from the United States Department of Commerce reports.

At the textile show in Mechanics Building you have seen exhibits of Greenville and Spartanburg, S. C. These exhibits urge the citizens of Massachusetts to put their hard-earned savings into mills in those cities. They call attention to the welcome with which new mills established in those cities will be greeted and point to the fact that their legislation encourages industry. Their local newspapers frankly state that they want New England savings in the form of capital and would even welcome our management but they do not want and will not have our mill operatives. For example, I would quote as follows from a Carolina textile paper:

"The New England cotton manufacturers who wish to buy or build mills in the South are welcome and we have no objection to New England superintendents and overseers who find that they can secure positions with Southern mills, but we positively draw the line at the movements of operatives for New England cotton mills to the South, and the matter may as well be fought out now as later.

"The mill operatives of the South have for generations boasted that they were of pure Anglo-Saxon blood, the best on earth, and they are not going to welcome the coming of the Slav, Poles, etc., with the knowledge that the infusion of their blood will in time produce a mixed race.

"About twenty years ago an effort was made to bring a lot of foreigners to Southern mills, but in every instance they were set upon by the local operatives who had too much personal pride to work beside such people, and every one of them was driven away."

It is brought out that New England is isolated as far as transportation is concerned and that her climate is severe. In fact, there is so much said against New England, and particularly Massachusetts, as a field for the cotton textile industry that some of our people have become discouraged and believe it is doomed anyhow.

As an illustration, I walked down the street with a telephone repair man, a very intelligent and thoughtful citizen. The news had just been published in the papers of another mill leaving New England and making its extensions in the South. This telephone man commented on it saying, there was nothing to do about it because it was natural that cotton mills should be located in close proximity to their raw material.

Our handicaps as to legislation are too well-known to need repetition. There are seventeen restrictive laws in Massachusetts as, for example, the law forbidding the employment of women for more than forty-eight hours per week compared with fifty-four, fifty-five, or more in competing States; the law preventing operation of textile mills with two separate eight-hour shifts per day where the shifts contain women. In stores or in laundries or in any other kind of work women can work in the evening up to 10 p. m., but in textile factories alone they are forbidden to work after 6. This is an example of the discouraging laws which have been passed against the textile industry. The effect of these laws, particularly this last one, is to prevent the operation of mills for a sufficient number of hours per week to justify the cost of new construction. It should be obvious that to obtain sufficient return on the investment required to build new mills or to put in new machinery requires operation for more than forty-eight hours per week either by the use of longer shifts or more than one shift.

Now, let us look at all these facts clearly and make sure what our future policy should be. In the case of heavy products, such as pig iron and steel, where freight rates are a very large proportion of their cost, it is obvious that the factories should be located close to the source of raw material.

In the case of cotton goods it is not necessarily so, because freight is a relatively small item in the cost of production. Furthermore the bulk of cotton mills in the South are located on the edge of or almost outside of the cotton belt. It is a popular fallacy that cotton mills are located in the cotton fields. In the great cotton mill district of the South, the Piedmont (in which I have included Virginia, North Carolina, South Carolina and Georgia), in the year from August 1, 1921, to August 1, 1922, the following figures of production and consumption are interesting:

	sumption Bales	duction Bales
Virginia	117,000	27,000
North Carolina	1,198,000	852,000
	Con-	Pro-
South Carolina	919,000	493,000
Georgia	782,000	715,000
	3,016,000	2,087,000

You will note the four States in question consumed 929,000 more bales of cotton than they produced. It must also be remembered that these are large States in area and often though cotton may be grown in the same State as the mill, it may require a fairly long railroad haul to move the cotton to the mill. Therefore, if cotton mills must be closer to their raw material, the Piedmont district is overloaded and the present development would be in other cotton States. A careful study of statistics on new construction, however, distinctly shows that the great growth is taking place in this same Piedmont district.

New England's cotton can come from anywhere in the cotton belt, mostly by water, so that she has a far greater choice as to the kind of cotton that her mills will use and at a very slight difference in the freight rate on account of water transportation, also because, as we well know, local freight rates are nearly as high as long through hauls. We have also the choice of foreign cotton such as Indian, Egyptian, Brazilian, Chinese, and Peruvian, which are becoming an increasingly important factor in the total world's production of cotton.

Now, as to labor, the Piedmont mills have bright, keen, intelligent, and American-speaking people, all white. They do not seem to have anywhere near exhausted their supplies of this labor and it is certainly good labor. In this connection, however, I know that the men in the South, who run these mills and who are in a position to know the facts, realize that many of the statements made against our New England labor are untrue. I am very tired of the attitude that our New England labor are foreigners and therefore clumsy and unskilled. This is not true. It is said on good authority that in Fall River 65 per cent of the textile operatives own their own homes. Can any other textile section of the country show on as large a scale as large a proportion of home-owners. It is hardly necessary to call attention to the fact that home owners make the best citizens and the best workers. True, many of these operatives were born in other countries and came to New England but they are making very good citizens. As compared with older countries, like England, we are all immigrants. It is simply that some of us have been here more generations than others. May I illustrate by another story: One of our oldest mill treasurers was reminiscing the other day about first immigrant operatives who came to New England and he could remember their arrival. In the room at the time was a mill agent, a very able and capable man. This man spoke up and said that his mother was among that group of immigrants who landed from the ship, and that she had gone to work immediately in the mill. He himself had entered another mill at a very, very early age and had been in one ever since. This man is now the operating head of a great and successful mill. Now this story, while it is only one instance, would apply to a great many men right here in this room. Men, who are capable of accomplishing this sort of career, certainly cannot make bad operatives. Our New England operatives are hard workers. They have had great experience, some more than others, and as a group, have real skill. They are thrifty and save money and own or intend to buy their own homes. As a group, they have not their equal in this country and I doubt anywhere in the world. Our New England mills can challenge any other industries in the country, especially in regard to continuous work on the part of the operatives and lack of absenteeism from various causes.

Now, as to climate. We do have what some people think to be a rugged and changeable climate here in New England and, in this connection, I would quote again from Dr. versity, who has been studying climate for many, many years and has summed up much of his work in a book entitled "Civilization and Climate." He says:

"We are frequently told that the Riviera or Southern California has an ideal climate. Florida lays claim to it in winter, the Alps in summer. Two of the few regions which rarely assert their preeminence in this respect are Boston with ist east winds and London with its fogs. Yet in many ways they have a strong claim to high rank. It all depends upon what we mean by 'ideal.' For rest and recreation a warm, equable climate is doubtless most delightful; for a fishing or climbing trip something quite different is desirable. For most people the really essential thing in life is the ordinary work of every day. Hence, the climate which is best for work may in the long run claim to be the most nearly ideal. At least, it is the one which people will ultimately choose in the largest numbers. The few disagreeable features at certain seasons, provided they are not seriously injurious to health, are no worse than the shiver at the beginning of a cold plunge."

On the basis of our factory operatives and students, the best climate would apparently be one in which the mean temperature rarely falls below the mental optimum of 38 degrees, or rises above the physical optimum of 60 degrees or possibly 65 degrees. From this point of view the most ideal conditions would seem at first thought to be found where the temperature at all seasons averages not far from 50 degrees, but this conclusion needs modification as will shortly appear. In four chief portions of the globe the winter temperature averages not far from 38 degrees, and that of summer not far from 60 degrees.

The other factor is the number of cyclonic storms. By this, as has already been explained, we mean the ordinary storms which produce our changes of weather from day to day in the United States and Europe. Possibly the storms are more important than the range of temperature from season to season, but until further data are available it seems wise to reckon the two as of equal value. The world's stormiest region, so far as known, includes the Great Lakes region of the United States and southern Canada. Around this center there is an area of great storminess extending southward approximately to Maryland and Kansas, and northwestward through the Dakotas to Alberta. Eastward it includes New England and the Maritime Provinces, while northward it quickly disappears.

I do not want to take too much of your time in reading from this book which I recommend as well worth your time and attention to read to yourself. Dr. Huntington's conclusions are further illustrated and clarified by maps and tables which indicate that one of the best manufacturing areas in the world, as far as climate conditions go, is that bounded by a line from Maryland to Kansas on the south, and including a small strip of Southern Canada and the Maritime Provinces on the north, bounded on the west by a line from somewhere in Kansas due north, and on the east by the Atlantic Ocean. Another area is England; a third large one includes the Rhine Valley, Germany, France, Northern Italy, and Austria; a fourth one, Japan. From this book it is clear that in the United States one of the best climate areas for manufacturing is that of New England and that it is considerably superior to any other great textile manufacturing center in this country.

The difference in cost of production between New England and other sections has meant that New England mills have suffered, as a whole, very intermittent operation, causing much temporary unemployment. The staple, cheaper goods, which we formerly ran for stock when fancy goods were not ordered, have been taken from us by competition which could produce more cheaply. I think it is fair to state and you gentlemen in this room will fully realize that New England mills have seldom or never lost orders where they were able to meet the price. There has been no question about the quality of the goods provided the prices were equal. It is seldom that a New England mill does not, at least, get the preference because of quality.

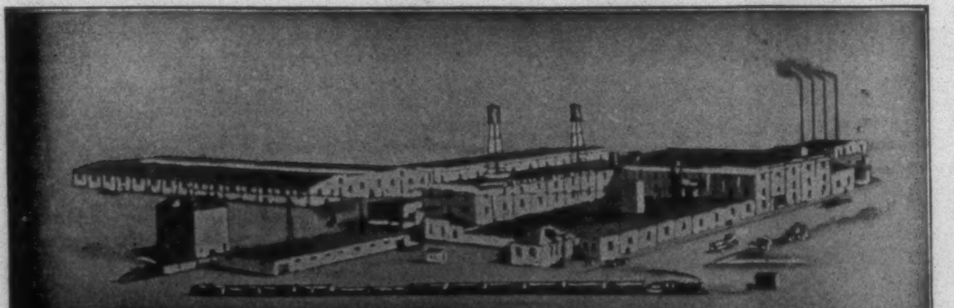
After all, it is the men in an industry, operatives and management, that will finally determine whether the industry is to be successful or to deteriorate. To sum up these various arguments, it would appear that we have the men, we have the management, and we have the climatic conditions which keep both good men and management on their toes.

There remains, then, the question of legislation which is much more favorable elsewhere than in Massachusetts and the welcome given to industry which is greater than we have hitherto received here at home. During the past year the Rhode Island and New Hampshire legislatures and now Maine, through a referendum of all its citizens, have acted on laws which the manufacturers had opposed. In Rhode Island and New Hampshire the legislatures voted not to change the existing fifty-four hour laws because the most thoughtful men among them felt that nothing more should be done to discourage manufacturing. In Maine, by a very large majority in the popular vote, the same decision was made. Another straw is the news that comes from time to time from the City of Lynn where the shoe industry has been going down hill for several years. The local citizens and workers there are now meeting together seeking a way to make Lynn a better place for the manufacture of shoes and put it back where it belongs. The managements of New England cotton mills for the last year and a half have been studying what they should do. They have a feeling of discouragement that, that if they make enlargements in Massachusetts, there will be more laws passed to make it more difficult to operate. They realize that the disparity now

FOUR—Presidents Address

(Continued on Page 32)

VICTOR MILL STARCH – The Weaver's Friend



It boils thin, penetrates the warps and carries the weight into cloth. It means good running work, satisfied help and one hundred per cent production.

We are in a position now to offer prompt shipments.

THE KEEVER STARCH COMPANY

COLUMBUS, OHIO

Southern Representatives:

James H. Maxwell, Greenville, S. C.
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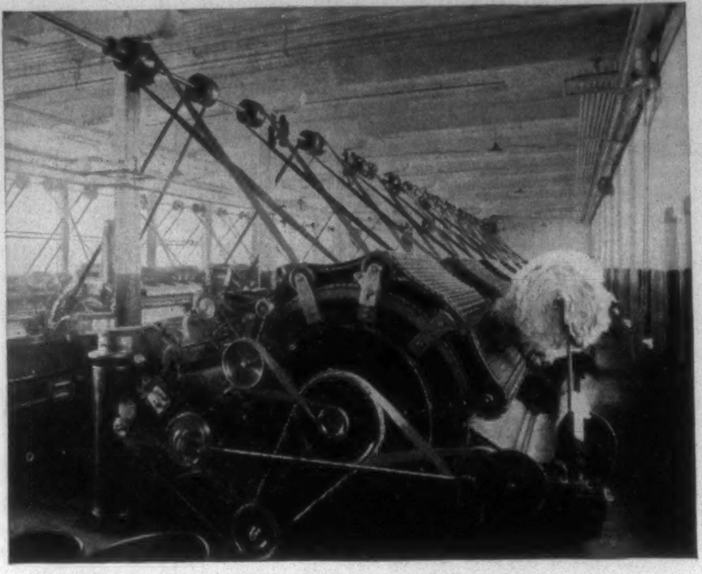
D. H. Wallace, Greenville, S. C.



An Actual Saving of $1893.14 in Belt Expense

This is the experience of the manager of a famous mill* who standardized on Graton and Knight Belting. He made this decision in August of 1921. And up to the present time, whenever a belt replacement has been necessary, a Graton and Knight Belt has been installed.

This is the result:

In the first six months of 1922 he saved in belt expense over the same period in 1921, **more than six hundred dollars.**

In the first six months of 1923 he saved over the year before, **over twelve hundred dollars.**

The figures for the first six months of this year against those of 1921, the year before the standardization on Graton and Knight Belts, show an **actual saving of $1893.14.**

Naturally enough, this manager, after over twenty years of experience, has stopped belt experiments. He knows that Graton and Knight belts mean economy to him—actual savings in dollars and cents.

For **your** particular belting problems, whatever the requirements of your plant may be, in the Graton and Knight Standardized Series there are belts of the proper weight, thickness and flexibility to transmit the right amount of power.

The book, "The Standardization of Belting," tells how, through constant analyzation of power requirements, we have developed a series of belts to meet every condition, to meet them so much better that economies like the one above result. When you write for the book tell us the type of transmission you are interested in.

A Graton and Knight engineer will gladly consult with you, giving you the benefit of the widest belting experience in the world.

GRATON & KNIGHT
WORCESTER, MASS.

G&K

*Name on Request

Branches and distributors in all principal cities throughout the world

WHO'S WHO

AMONG TEXTILE SALESMEN

EDGAR A. TERRELL.

(Terrell Machine Company)

EDGAR A. TERRELL.

Edgar A. Terrell is a young man who has shown that it does not always require age in order to acquire the business acumen and judgment necessary to success.

Thrown upon his own resources by the sudden death of his father, who was for many years well known as the manager of the Erwin Cotton Mills at Cooleemee, N. C., Edgar took over certain patents upon bobbin and quill cleaning machinery and has established and developed the Terrell Machine Company, of Charlotte, N. C., until they own a splendid shop in Charlotte and sell their machines both North and South.

He was born at Asheville, N. C., in December, 1894, graduated at The Citadel in Charleston, S. C., married a Charlotte girl and has one child.

He was for two years with the Erwin Cotton Mills and later filled a position as civil engineer with the Aluminum Company of America.

He established his present business seven years ago but left it during the World War to serve as a Lieutenant in the Chemical Warfare Division and was in France for four months.

The shop that he has built in Charlotte for the manufacture of his bobbin and quill cleaning machinery is equipped with modern and special built machinery that operates at a high degree of efficiency.

Edgar Terrell has demonstrated that he has both executive ability and salesmanship and the capacity for the hard work necessary for success.

JAMES A. WALKER.

(Johnson Belting Company)

JAMES A. WALKER.

James A. Walker has more practical mill experience than most of the textile salesman, as he has alternated between the mills and the road.

After a long mill experience during which he was overseer of carding in several mills, he accepted a position with the Edw. R. Ladew Belting Company and became branch manager at Charlotte.

After returning to the mills for a short time his services were secured by the Johnson Belting Company, of New York, as Southern representative, with headquarters at Gastonia, N. C.

Desiring to leave the road, he became overseer of carding at the Chadwick-Hoskins Mill No. 5 in Charlotte and filled that position for about two years but the Johnson Belting Company recently sought his services and made sufficient inducement to get him to again become their Southern representative.

Mr. Walker was born at Greensboro, N. C., in 1876, and he evidently does not believe in race suicide, as he has a family of nine children.

Combining his practical experience with salesmanship, he has been successful as a belting salesman and produces a large volume of business for his firm.

The Johnson Belting Co. is a well known maker of high quality belts

Clark's Directory of Southern Textile Mills
Contains Complete data relative to Southern Mills
Pocket Size Revised Twice Yearly
CLARK PUBLISHING CO.
CHARLOTTE, N. C.

Development of the Cotton Manufacturing Industry

(By Gilbert Thompson, Treasurer of Berkshire Cotton Manufacturing Company, before National Association of Cotton Manufacturers.)

The subject of this paper is "The Development of the Cotton Industry in Relation to Manufacturing."

I propose to discuss this subject from three different angles. First—the development of the various machines and the different processes in the past 25 years—this being the limit of my connection with the industry. Second—the development as to operatives' working conditions. Third—the development of co-operation and the fostering of favorable understanding with our operatives and public sentiment in relation to cotton manufacturing industries.

In taking up the first angle, I wish it were possible to speak of vast new developments which have been obtained during the past 25 years, but it would seem that the type and hte latest style and design of machines used in the different processes are about the same as those in use 25 years ago. There are some changes which might be termed refinements; these we will consider with such new machines as have been developed. The introduction of the bale-breaker or hopper-opener, combined with a blast and suction, condenser and distributing lattice has made possible the building of larger spinning units, and in many cases a central opening room for a group of spinning mills located convenient to cotton storage.

This system has reduced handling cost by the elimination of many hands. This method, in my opinion, does not give the results as to cleanness and evenness in spun yarns as the old method of hand opening, and ageing, but it is the nearest thing to it where cotton is opened and put direct to process. Further refinements to this system, which are now taking place, will, no doubt, accomplish as good results as the ageing method, within a very short time, and combined with its cheaper cost and larger capacity is an important development.

Comber Highly Developed.

We now have to pass to the comber to find the next marked change in processing—the high productive comber is a modern development; it is supposed to have reduced the cost of this process. I do not know that it has. I was a participant in a two weeks' test of 80-6 head 8-inch lap Hetherington machines against 40 of the high productive combers on 1¾-inch staple cotton and the results claimed for the high productive machines were not borne out. In fairness it must be stated that this individual comber room was operating more efficiently than any one that I have seen before or since.

As to the quality of work on fine numbers I maintain that the old machine would do superior work. I am told (I do not know this form investigation) that the very fine spinners in England do not put in the high productive comber. Comparative power, I should say, was very close. Conservation of space—this seems to be where this machine can be properly called a development. I have now had several experiences in replacing the old type comber by half the number of the new. In every case the room so saved has been filled with more cards to give us the results wanted. What part of this has been required by the forced use of lower grade and poor character, quick maturing cotton, would be difficult to say, but surely some.

Tape-Drive on Spinning Frame.

The next development in machinery of any supposed advantage is the tape-drive on the spinning frame. I am inclined to think that in many instances this is a much overrated development. The evenness of twist, which is claimed to be so superior to the older type, I cannot find in numbers above 60s after many experiments. When a comparison of power is made, everything is in favor of the old method. If all our developments were of the mediocrity of this one, it would have indeed been a meagre period.

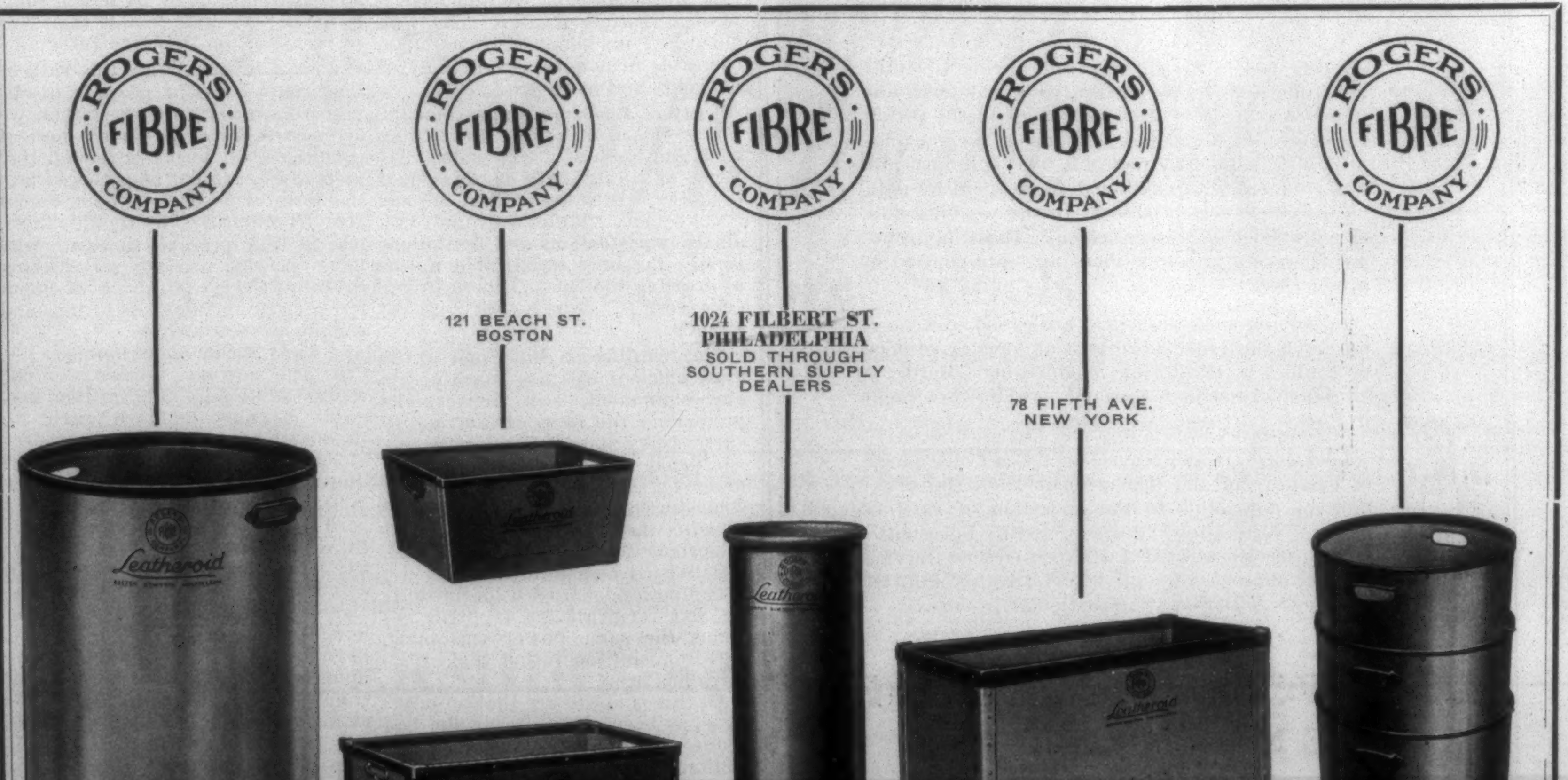
The next development is the drawing-in machine, the knotting machine, hand and power. These are all too well known to comment upon and are marks of progress.

The automatic looms. This subject and development is one of great interest to many of you. I am not competent to comment to any extent upon this development, because the type of goods with which I have been familiar in manufacturing, has seemed not to have been the field for which this development found its best soil, and the types where it took root, were so numerous, that it has only lately begun to take up our character of goods. I understand some very interesting and momentous results have been obtained. Manufacturers in general would say that the automatic loom was the outstanding development of the last 25 years, being adaptable to most types of fabric, on which results have shown a higher perfected product, more production at cheaper cost and it has allowed expansion of the industry without demanding an increase of wevaers who are the largest class of our skilled operatives.

More Cost-Reducing Devices Wanted.

In summing up the development of this angle of our subject, it would seem if we are to maintain cotton goods as the cheapest type of clothing for the human race, that the developments in machines and progress along the lines of reducing cost, must be greater in the next 25 years than in the past 25 years. The higher cost of raw material and

(Continued on Page 14)


ROGERS FIBRE COMPANY
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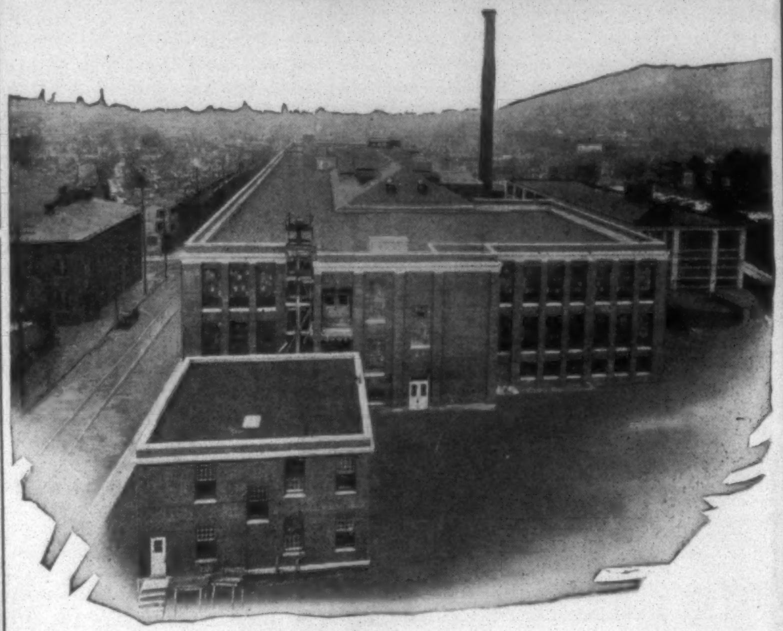

Here was a mill that had completely outgrown itself. With the demand steadily growing, more production capacity was essential. Yet the company, if it was to continue giving service to its customers, could not afford to close down a single day.

Lockwood, Greene & Co. met the problem by entirely rehabilitating and modernizing the mill, installing a new power plant, new machinery and improving the old. The equipment in the picker room was increased and new pickers were equipped with individual motors. The spinning mill was enlarged with additional frames run by individual chain-driven motors. In the weaving mill, 160 Draper looms were added. These improvements were all made without any interruption of production.

In solving such problems, Lockwood, Greene & Co. have the great advantage of long experience as leaders in textile mill engineering. Hardly a situation arises that does not have its precedent in Lockwood-Greene experience.

Lockwood-Greene service includes every phase of engineering and management from the planning of new mills to the operation of existing plants. Write for "Building with Foresight," which describes what Lockwood-Greene service has accomplished for others. Or better still, let us discuss with you your particular problems.

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Need of Improvement in Yarn Machinery

(By Professor Stephen E. Smith, Lowell Textile School, Lowell, Mass., before National Association of Cotton Manufacturers.)

In a book called "A History of the Cotton Manufacture of Great Britain," written by Edward Baines and published in 1835, the author during the course of his prefatorial remarks calls attention to the rise and progress of the cotton manufacturing industry and states that one of his objects and states that one of his objects in writing the book is to establish more fully and accurately the origin and authorship of such great inventions as the "fly shuttle, roller drawing, the carding machine, the mule and the power loom."

This was written of a condition in the industry that existed about 100 years ago and gives the impression as we now read it, that at that time the inventions named were already so old that the truth regarding their origin and invention was in doubt and in grave danger of being entirely lost. With that situation in mind let us now look about a modern cotton mill of today and observe the nature of the operations which we find and the principles employed in machinery now in use.

With the exception of the combing machine and the ring spinning frame with its ring and traveler for twisting the strand, we find that the yarn manufacturing equipment of a modern cotton mill is made up chiefly of machines that act upon the same principles as did those of 100 years and more ago.

Plenty of Room for Improvement.

The "fly shuttle" is still flying back and forth at a tremendous expense of energy both in starting it in motion and stopping it at the end of its course. "Roller drawing" with all its imperfections and limitations is still the only practicable means of drawing the cotton, fibers in our endeavor to reduce the size of strands.

The "carding machine," one of the most efficient cleaning machines in our equipment, still delivers its product in the form of a strand of curly, kinky and only approximately paralleled fiber. The self-acting mule so largely discarded by our domestic cotton manufacturers still remains the only real machine for the production of the unusually fine, soft twisted and uniform yarns.

The power loom with its fly shuttle and reciprocating lay still remains the same power-consuming, din-producing operation that it always has been.

All this is not to say that no progress has been made during the last century or more in improving our methods of manufacturing cotton yarn and cloth. Many and many an improvement in the details of machine design, and many devices or mechanisms have been added to our machines, and some additional operations calculated to put material in better form for economical use have been introduced; but nevertheless in principle our methods of cleaning, straightening and paralleling fiber and reducing the strands to the desired size, as well as the fabrication of cloth, remain the same today as they were over a century ago.

As the mariner after a storm first attempts to get his bearings, let us make a brief survey of the situation as we now find it and see wherein the product of our present operations is imperfect and what, if anything, may be done to improve it. And to start at the beginning let us consider the picker lap and the respects in which it may be improved.

Picker Lap Too Dirty.

By most critics, the picker lap will be considered to be too dirty and also too uneven. To clean cotton in the picker, we are at the present time depending upon the beater to tear masses of fiber apart and largely upon the force of gravity to separate lint and dirt. It would seem that a method of beating which would reduce a mass of fiber to the smallest possible locks should result in giving us a greater degree of cleanliness, as most of the dirt particles will fall out of cotton if given a fair opportunity to do so. The most obvious step to be taken in securing this result is to enlarge the field of action of the pin beater and possibly to alter its design so as to make it even more able than now to break cotton into tiny tufts.

With cotton torn into tiny tufts of fiber may it not be possible to obtain a more uniform sheet than we are now securing under the best of conditions? It seems as though tiny tufts of fiber might be gathered into the form of a sheet without excessive irregularities in its thickness, but at the present time all who have occasion to study our picking operations are well aware of much irregularity in thickness of laps and weight of card slivers.

Card Room Shortcomings.

It has always seemed to the writer as though the carding machine as now designed ought to produce a very uniform sliver provided it could be fed with a lap of uniform weight and thickness. When one realizes that a yard of card sliver represents about one-third inch of lap it will be seen that the lap irregularities of very small extent may cause considerable variation in card slivers. The present irregularities in the picker lap appear to the writer to be due to the imperfections in the system of transporting cotton from the beater chamber to the revolving screens. Whether this situation may be improved by altering our air control, or by redesigning the flues connecting the beater chamber with the screens, cannot be determined without much experimenting.

As a means of removing dust and fine dirt and very short fiber from cotton, the card leaves little to be desired, but when we attempt a more accurate separation of fiber

(Continued on Page 32)

Back of Spinning Efficiency

Lestershire "Tough Fibre" Spools

Mills that make these spools standard equipment eliminate spool and yarn wastage—increase production and profits.

The heads of Lestershires are made from pure rag fibre vulcanized to indestructible hardness—permanently fastened to barrels of Rock Maple by seasoned dogwood bushings and a patented wedging process. Spool toughness and spool smoothness!—a combination which increases production and prevents waste.

Try the creel test at our expense. Send us one of your spools—a batch of Lestershires of the same type will be made up and sent you free of charge. Put them on one of your machines and note the difference.

Unconditional Guarantee

Lestershire Spools are guaranteed unconditionally. No time limit applies.

We have prepared for free distribution a booklet containing valuable spool information. Write for it now.

LESTERSHIRE SPOOL & MFG. COMPANY

Manufacturers of High Grade Wooden Spools of Every Description

140 Baldwin Street, Johnson City, N. Y.

Southern Office,
32 Church Street,
Charlotte, N. C.

Development of the Cotton Industry

(Continued from Page 11)

labor in the period which the industry seems to have entered upon invites the developing of substitutes. On the other hand, the continued progress toward fine and superior fabric, combined and decorated with other materials, may be a plane on which we can continue to develop and prosper.

The developments of the past 25 years in regard to working conditions for our operatives have been continuous and so nicely attuned, that one hardly realizes the magnitude of this phase of our development unless he has had the opportunity to visit some of our older plants, and then within a short period of time, some of the newest and latest plants.

It is hard to express in writing the cause, and the individual equipment and design which brought about this transition from mediocre to ideal, but we believe in the main it is the spirit of high American standards.

The mechanical developments which have made these conditions possible are ventilating, humidifying, and dust removing systems and the adoption of electrical driving apparatus. The mill engineer has created a design of building which allows not only room to work in but to live in, a building of architectural beauty, in simpleness, ruggedness and accomplishment of purpose.

A New Spirit.

The next phase which we are to discuss in the development of cotton manufacturing seems to have been one which was dead and buried in the early days of my connection with the industry. Manufacturers seemed at that time to have entered a period in which the operatives' point of view did not exist; no effort was made in larger centers to understand them or to have any personal touch with them. The dread of discharge was the incentive to work and the spirit of loyalty was hardly active, and this period seemed barren of intelligent direction toward a mutual understanding, on which could be built the foundation for an ever-increasing supply of loyal, intelligent and ambitious operatives.

American-born young men and women would not work under these conditions and it was rare to find them in the mill. Those who had lived in this country for five or more years and had come to some idea of our traditions, took the first opportunity to get out. The results were that we saw the passing of the English operative, the coming in of the French Canadian, their wane; the coming in of the Portuguese immigrant, and lastly the Pole.

Later years have seen the manufacturer resurrect this former dead spirit of co-operation, understanding and personal touch, into a living, active spirit, and bids fair in the next 25 years of producing astounding results in the type of operatives which will be seen in our mills. Well-directed community work is being done, labor turnover is being reduced, a spirit of loyalty is slowly being awakened and the work has gone forth that the mill is a good place to workk. College and high school boys have been awakened and are desirous of coming among us as a field for advancement. Such efforts as these are to bear richest fruit in the future.

Build Up Public Support.

Similar to these conditions existing in our relations with our operatives, have been our relations with the public and the people of our section except, that we seem yet to hesitate to do our part to make people understand the great value of the cotton manufacturing plants to any community, and our development in this phase has indeed been very meagre. What we need are boosters; we need to waken the people to our great, sanitary, healthful factories of lucrative employment. This goes hand in hand with the welfare of our operatives.

We have seen the cotton industry nearly legislated into ruin. Why? and the vast network of our railroads, the arteries of our country, nearly legislated into ruin. Why? For the want of public support. Years ago, it was the common opinion of New England people that were not in our mills, that the mills were almost houses of pestilence, and the shuttle was the "kiss of death." These expressions merely show the trend of public sentiment at that time. Was it any wonder that a few astute leaders of labor sensed the public pulse and filled statute books with restrictive laws. Our development in regard to creating public sentiment has been poor in the past; let us see to it that it is great in the future.

"To carry on we are obliged to develop in all phases of management, and the younger men who have our burden to pick up, will have the past to guide them. With the superior education obtainable today, it seems we are leaving the industr yin safe hands and that the developments of the future will be nearer in accord with our yearly progress than they have been in the past."

Industries whose Leaders Save with McClave Combustion Systems

III-FOOD PRODUCTS

THE cooking and evaporating processes employed by the food industries consume huge quantities of steam. It is quite natural, therefore, that the owners of these plants should make every effort to keep the cost of this important item down to the lowest possible figure.

McClave Combustion Systems are saving money in the food industry by their more efficient and smokeless combustion of very low grade coals. Their reliability in service, low maintenance charges and long life have received due recognition by the many repeat orders that have been put through our shops.

The McClave-Brooks plant is the largest in the country devoted solely to the manufacture of grates and stoker combustion equipment. It is well equipped to maintain the high quality standard to which every McClave Product must conform.

Our engineering department is at your service to tell you how your combustion efficiency can be improved. Write us now for the series of Bulletins describing McClave Products.

McCLAVE-BROOKS COMPANY
Sole Makers of the Famous McClave Grates Since 1883
Scranton, Pennsylvania

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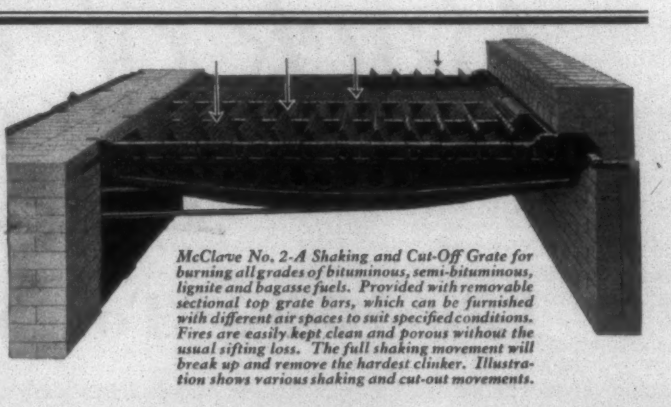

McClave No. 2-A Shaking and Cut-Off Grate for burning all grades of bituminous, semi-bituminous, lignite and bagasse fuels. Provided with removable sectional top grate bars, which can be furnished with different air spaces to suit specified conditions. Fires are easily kept clean and porous without the usual sifting loss. The full shaking movement will break up and remove the hardest clinker. Illustration shows various shaking and cut-out movements.

McClave
GRATES
STOKERS
STEAM
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These makers of food products have installed McClave Combustion Equipment:

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(6 plants)
Armour & Company
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(11 plants)
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Borden Company
F. G. Vogt & Sons Co.
Morton Salt Company
Carnation Milk Products Co.

—and many others

McClave COMBUSTION SYSTEMS *for greater economy*

THE VERDICT
OF THE
WINDER'S JURY

1.

"Sonocones" are as accurate as the *other* parts of the winder:

2.

They are perfectly round and accurately tapered:

3.

They are *invariably* Uniform in size and Quality:

4.

They have a unique surface that catches the yarn at the first lap:

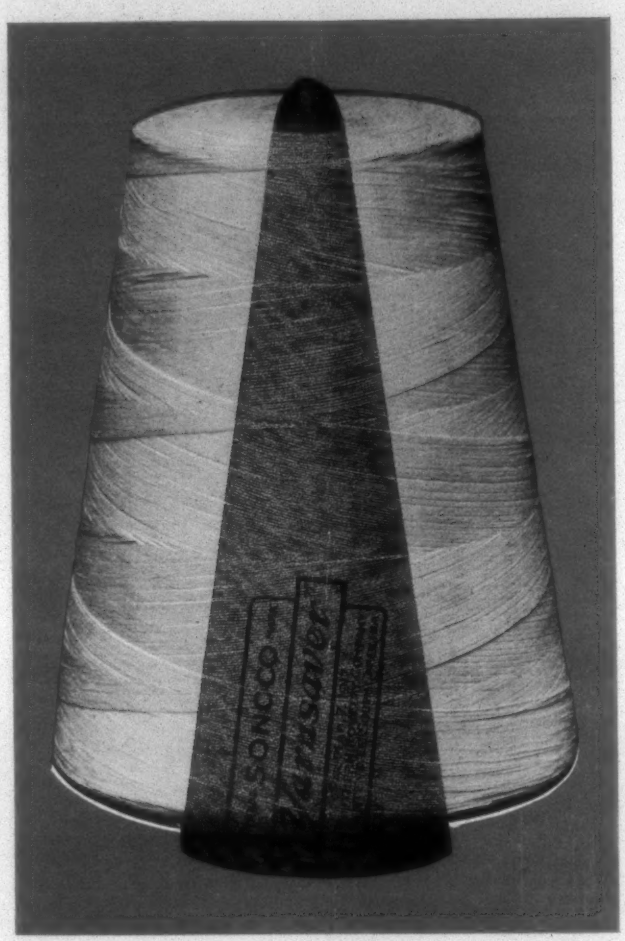
5.

The surface also prevents the wound yarn from slipping off the cone:

6.

They are uniform in weight:

If we are not familiar with your requirements, state taper of cones or send samples. We are usually able to fill orders promptly. We load into the freight cars at our very doors.



7.

They wind the yarn into true even, handsome, quick-selling packages:

8.

They "knit-off" evenly to the last lap:

9.

They are thoroughly dried and seasoned:

10.

They are Balanced, therefore the tension is even throughout the package:

11.

They are carefully packed and always arrive in good condition:

12.

They *starve* the waste can.

When ordering specify "Yarnsaver" if the round-apex cone (as illustrated) is required, or Regular, if the plain-end cone is preferred: Carload lots save freight.

The appreciative comment of Winders, the Country over, is briefly summed up in these "Twelve Good *Points* and True". Upon the testimony of their experience, we rest our case:

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Write for Samples and Prices to

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Sonoco Products Co. Successor
C. W. COKER, President

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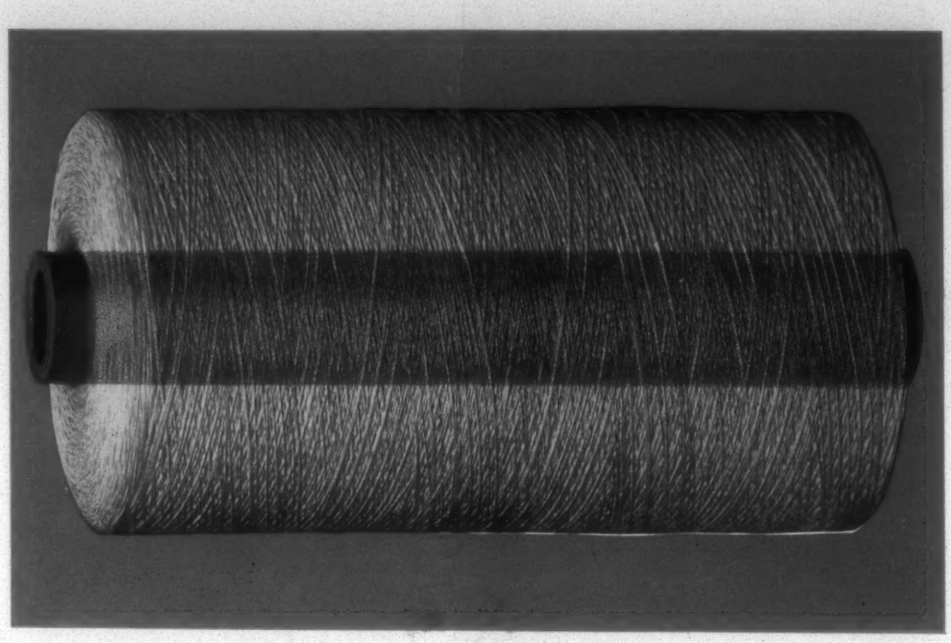

Look Into The Winding

In every true-wound Package you will find a Perfect Tube — Rigid, absolutely Round, with sides Parallel from end to end. The same is true of Cloth-Rolls. The Tube is at once a Mold and a Framework and its qualities are transmitted unfailingly to the package. Where you find unvariably perfect packages,

You Will Find

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CLOTH CORES **PARALLEL TUBES**

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Sonoco Products Co. Successor
Eastern Sales Office, New Bedford, Mass. L. T. Shurtleff, Mgr. P. O. Box 170

[OVER]

Vechten Waring Co. Adv., New York

Design

(M. D. C. Crawford, Research Editor of "Women's Wear," before National Association of Cotton Manufacturers.)

I assume that no one in this audience need conviction on the fact that good design, a more sympathetic understanding of fashion, a closer relationship between the factors that direct style and the mills that produce fabric, is wholly desirable.

If at this late date this question has still to be discussed and argued, then is the cause lost indeed. Who looks, therefore, to this brief address for special pleading in the name of art or design shall look in vain.

On the question, however, of what is good design, what is fashion or style, there not only is but there should be diversified points of view. Each mill has an individual problem determined by its powers of production and the markets it serves.

It is obvious, therefore, that no man, with the best intentions in the world, can outline a single plan that can be devoted and applied by the different types of mills irrespective of these special conditions. All that can be done safely and sincerely is to point out certain general rules and outline the limits of co-operative effort.

Limiting the word design to the application of ornament to fabric, there are four distinct creative processes, first, the conception of an idea; second, experimentation with this idea to transform it into design; third, the mechanical reproduction of the design in material; and fourth, the acceptance of the finished product by those individuals in kindred industries who must eventually use it in expressing their ideas.

The sources of inspiration for the great mass of textile designs may be roughly outlined as follows:

Old styles from past seasons.

Iideas adopted from foreign creations.

The observed accidents and incidents of production.

Research in the history of design.

Unquestionably, in every mill of long standing, there are carefully preserved records of old smaples, a most fruitful field of inspiration. Combinations of two or more ideas, reinterpreted in the light of gradually ripening experience, often develop interesting new styles.

European fabrics and designs are often used to inspire our own patterns. Europe, especially France, has a large number of handcraft organizations where experimentation in new ideas of recreation of the old can be conducted at reasonable economic costs. The ease of such a course, the charm often associated with an exotic idea, make this a rather popular form of creation.

Many fabrics of great commercial and artistic success are the result of the little mistakes made in weaving, dyeing or printing, calculations, and some very charming new ideas have resulted from an intelligent survey of manufacturing inaccuracies, many others result from actual and deliberate experiments suggested in this way.

But by far the greatest opportunity, the richest in reward as in possibilities, lies in the historic arts. Many years of familiarity with the life of new styles and new designs enables me to say with deep conviction that every style enjoying a successful, artistic economic life, has been based either directly or indirectly on some historic inspiration.

The museums of the United States, particularly in the East, are singularly rich in fabric collections. With the exceptions of a few museums in New York City, I do not think our institutions are as accessible to professional designers as they might be. Not sufficient distinction is made between the student and the professional. There is neither the privacy nor that intimate association with materials essential to a proper understanding of design motifs. But, speaking for the American Museum of Natural History and the Brooklyn Institute Museum, and to a certain degree, the Metropolitan Museum of Art, even this minor criticism is not true. These great institutions, without undue encouragement from the industries, have made ample provisions, far in advance of any industrial use that has so far been made of their vast and ever increasing collections.

The spirit which animates these museums, the definite and intelligent will be of economic significance in this age, may be relied upon to continue the work they have begun, and to gradually carry their collections far beyond anything that European institutions can show. Art collections travel easily towards the deepest purse.

There is enough material in these museums now, if properly used, to give new designs to the textile industries of America for an indefinite period. I do not mean by this, that the museums should not go on adding to their collections as opportunity offers, for opportunity in this field, as in every other, must be grasped when it presents itself. But they are so far in advance of the industry, in their vision of the future of our decorative needs that it is hardly fair to make any suggestion to them in this brief talk, which might in any sense be interpreted as a criticism of what they have already done, or as an implication that they may have left some particular detail unfinished.

What I have said of museums is almost equally true of libraries. No doubt when the different industries come to make full use of both types of institutions, certain details will be changed, certain additions made both to collections and to means of using the material. But for the present I say with deep thankfulness it is most fortunate that our museums, were so forehanded, so certain that the time must come when the need for their services would be felt. Had they awaited the interest of the industries, great masses of invaluable material might easily have been lost beyond redemption.

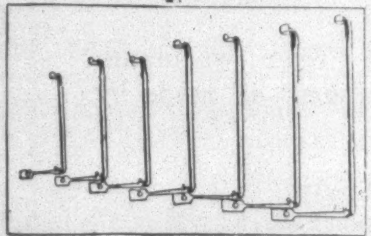
Each of the methods of obtaining design is worthy of consideration. Each of the methods has certain limitations. There is an element of danger in constantly referring to the previous season's designs. It is very easy in this way, unfortunately, for a group of designers to get in a rut so that each year their designs, while technically different, are actually very similar, and represent no real diversity to the minds of either the retailers or the public. The use of foreign ideas, aside from the ethics of the situation has a further disadvantage, since it always places the American product in an inferior position and makes its sale not a result of a desire to possess it, but merely of price; and to this contest, as your own experience shows you, there is no end.

Many good ideas are often developed in mills through mechanical accidents as I have mentioned above, and experimentation in mills on the actual machines is desirable in styling.

It must, however, be very carefully watched. The general tendency is to go too far. The difficulty is that the mill technician trained in the delicacy of operation, the necessity for perfect co-ordination between each part and process, comes to mistake a super-accuracy in product, an unpleasing smoothness in finish for beauty. Few men can be good machine directors and possess, at the same time, the keen sense of appreciation which should be the part of each artist's mental equipment. This is why machine created designs usually lack that vague quality of charm and why fabrics produced under craft conditions, more generally have this desirable ingredient.

The proper interpretation of historic ideas using original material as a source of inspiration is, therefore, the most reasonable, the surest, the most productive method. All arts grow from ancient ideas, all peoples have borrowed from each other and in the borrowing mutually enriched each other. The inspiration that designers of one epoch find in the efforts of previous peoples is too vast to estimate. Here lies the force which from age to age, from people to people, has carried the divine spirit of beauty, the subtle power to add to raw material a charm distinct from its intrinsic value. Here lies the inheritance of beauty bequeathed to us by the fruitful centuries. There is no people, within the scope of our historic consciousness who have produced beauty in fabrics, but we have some representation of their

(Continued on Page 18)



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Pulverized Coal

(F. W. Dean, before National Association of Cotton Manufacturers.)

There are reasons for believing that the pulverization of coal furnishes the most perfect, and, in fact, the ultimate means of burning that fuel with completeness and therefore with maximum economy. Moreover, it provides means of consuming coals of the qualities with which other means fail, and it does this with the same degree of perfection that is realized with coal of the better and best grade. Thus it renders available coals that are so strong in sulphur that they are unusable and unmarketable, and coals that have ash that fuses at so low a temperature that they render other means of combustion unworkable. Similarly it removes the difficulties of burning lignite so that those vast deposits of half-formed coal that are found in the western part of North America yield to it as well as true coal.

The advent just now of perfected means of producing pulverized coal is most timely and will assist the owners of industrial plants in keeping down fuel costs at a time when they, and the cost of attendance, are causing grave concern. The employment of fuel oil promised to be a means of accomplsihing this and in consequence of its many advantages and low cost of attendance, but the uncertainty of occurrence, the admitted growing scarcity and increasing cost, the importance of its use as fuel at sea, and, its many imperative uses on land for other purposes than steam-making, give strong reasons for believing that it must soon be abandoned as fuel on land. In fact, many persons consider it almost criminal to use oil for boiler and house heating fuel.

I have said that pulverization furnishes the ultimate means for the attainment of economy in the combustion of coal. This is so because all but the smallest fraction of the fuel is burnt, there being less than one-half of one per cent of carbon in the ash against, say, anywhere from 15 to 40 per cent by other means, and because of the perfection with which the burdened portion is consumed. A higher per cent of CO2, usually unaccompanied by CO, can be realized than is attainable by any other means. The importance of this will be realized when it is stated that a pound of carbon when burned to CO2 yields about 14,500 B. t. u., and when burned to CO, 4300 B. t. u.

On account of the complete mixing of the coal with the air of combustion, less surplus air is necessary than by any other means. Just so much less air requires heating and less surplus escapes from the chimney with heat which cannot be reclaimed. Incidentally a given chimney has more capacity from this cause than when serving other means of combustion.

Having made some general remarks with reference to the advantages of pulverized coal as a heat producer, it is important to explain the means by which the results are brought about. The coal is pulverized to a very high degree of fineness, such that, in general, upwards of 70 per cent will pass through a screen having 40,000 openings per square inch. This screen is formed by wire of .002 inches in diameter with 200 spaces between them in one inch of width and as there are two sets of these wires at right angles to each other, there are forty thousand openings in a square inch. Such a screen is known as a 200 mesh screen. Coal that is so fine that from 75 per cent to 85 per cent of it will pass through such a screen is exceedingly fine, and when thoroughly mixed with air is in a condition to burn much like gas and with great completeness if the temperature is sufficiently high. The temperature required comes from the incandescent brickwork of the furnace and from the coal already burning. When air accompanies coal in intimate contact with the very small particles, it is evident that the conditions for combustion exist to great perfection and that only a small air surplus is needed. Thus nearly all of the coal is completely burnt. This perfection of combustion is still further brought about from the fact that the process of pulverization to a great extent breaks the earthly matter away from the carbon and thus exposes the latter to intimate contact with the air.

It is apparent from these considerations that most excellent combustion results, and that CO is conspicuous by its absence.

The question is naturally asked how is the first started, and the answer is that this is done just as with any other means of burning fuel, that is to say with wood, oily waste, or a stream of oil.

In combustion a certain amount of air is theoretically needed to effect complete combustion, but on account of the difficulty of properly mixing the combustible portion of the fuel with the air a great excess of the latter is necessary with hand or stoker firing. With pulverized coal, as already stated, the excuse air is small, and can be so reduced that a high furnace temperature results. This temperature can be sufficiently high to melt the ash, and slag results. The slag is trouble some and is prevented by keeping the furnace temperature down. One way is by making the furnace with a water tube lining on sides, ends and bottom connected with the boiler in such a way that there is a natural circulation through it from one end of the boiler to the other. The tubes are covered with box tiles. The tubes keep the tiles in good condition while the latter are still at a sufficiently high temperature to maintain combustion. The tubes also prevent the brickwork from being injured, and the setting is made permanent. Besides this they add to the heating surface of the boiler and improve the economy. Another way of preventing melting of the ash is to build the furnace walls with air spaces which are supplied with air from outside and deliver it at advantageous points in the furnace. This is the usual method. The air in circulating cools and helps to maintain the brickwork while it cools the ash which falls as a fine light colored powder. In consequence of this cooling and the absence of local impingement of hot gases on the brickwork the life of the latter is prolonged. The furnace is assisted in resisting the heat by the air that enters through the air ports and rises so as to veil the walls. Sometimes the water jacket is used on the bottom of the furnace in combination with the air cooling, this being the case when the furnace is so wide that the air will not penetrate sufficiently far.

As might be expected there is but little smoke from pulverized coal.

While all of the conditions seem to be present for immediate combustion of pulverized coal, the fact is that time is necessary. As the fuel is still in small particles moving with considerable velocity as it enters the furnace a long travel for complete combustion is necessary in order to provide the time. This gives rise to the requirement of considerable furnace volume, and the volume usually taken is two cubic feet per horse power to be developed, but not per rated horse power of the boiler. Small furnace volumes will do for rated horse powers. It is important that the fuel should so enter the furnace that the whole volume of the furnace is utilized. Pulverized coal is not alone in requiring considerable furnace volume, as oil, especially with some burners, requires it, and it is not uncommon to provide boilers which are fired by hand and by stokers with sufficient volume for pulverized coal.

The fact that the furnace is empty is an attractive feature of pulverized coal, and another, equally attractive, is that no part of the apparatus is subjected to heat. Still another important feature is that all of the coal used for starting up is utilized, and none of it remains in the furnace after the supply is stopped. In the case of stokers a cart load of coal may be put in the furnace when starting, and another left in after the demand for steam is over.

From the last paragraph it is evident that no coal is used for banking. When the demand for steam ceases the supply of coal is discontinued and the furnace openings and stop valves are closed. The brickwork remains hot and there will be steam pressure in the morning. When the time of starting arrives a little wood or other kindling is used and the coal ignites immediately. Thus there is very little if any smoke when starting. When starting an absolutely cold boiler more kindling is required and some smoke results.

It is best to use nearly balanced draft with pulverized coal as by that means the furnace volume will be better utilized and leakage of air through the furnace walls will be diminished.

The question is often asked whether any dust escapes from the chimney of a pulverized coal plant. There undoubtedly is dust, as there is from hand or stoker fired plants, but it is a much less harmful kind. It is a very fine, clean and sootless powder, and is so light in weight that it spreads over a great area and is with difficulty identified. In fact, of the various persons whom I know that have been so situated that they would notice dust if it were present, not one has seen any.

Some makers of coal pulverizers find it necessary to dry the coal in order to prevent it from blocking up the machine with a doughy mass and prevent its being removed by the suction fan which transfers it from the pulverizers to the storage bin. Other pulverizers do not require the coal to be dried.

On the general subject of drying it can be said that it is justifiable if it can be shown to be a good investment, considering the fixed charges of the apparatus and the economical results obtained. It is not a good thing to dry the coal before it is pulverized because it may, on account of its temperature, produce explosions after pulverization, especially if it has been dried by a live fire. While explosions of pulverized coal are not expected and are infrequent, it cannot be ignored that they have taken place and are possible. If, however, the drying is done in the pulverizer itself of a non-storage system, especially if waste heat is used for this purpose, economy results and explosions do not occur. In this case it would seem that the results would justify the expense.

Fortunately there is not much moisture in eastern coals, rarely reaching five per cent, and commonly being 1½ to 2½ per cent.

Summarizing the reasons for economy of coal by pulverization they may be stated as follows:

1. Practically all of the coal is burnt, there being almost none in the ash.
2. The combustible elements of the coal are more completely burnt to CO2 than by any other means.
3. All of the coal in starting is utilized.
4. When stopping no coal is left in the furnace.
5. No banking coal is used, and no standby losses occur except by radiation.
6. Coal that fails to burn in suspension and falls to the bottom of the furnace burns slowly.
7. Accurate control of air to accompany the fuel used.
8. Instant change of rate of firing to meet needs.
9. Low draft requirements.
10. Low labor costs.

Pulverized coal has been used for some purposes so many years that the question is often asked why has it so recently been used for boilers, and why is it now so suddenly popular. There are several reasons for this. One is that the economy expected was not formerly realized, and the reason for this was not fully understood. In consequence of this it was used only for certain purposes where economy of fuel was of secondary importance. There was difficulty in pulverizing the coal to sufficient fineness and furnace design was not understood. In addition to this, stokers, and especially underfeed stokers, were developed to a high degree of perfection and carried everything before them. Pulverized coal, however, was smouldering, and there was a realization that if it could produce the desired results it would have some advantages over hand fires and stokers. Persistent efforts were con-

(Continued on Page 28)

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(Continued from Page 15)

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Your first need, is therefore, artists with interpretive power, and an understanding of artistic research. The great need in all undertakings, finds ultimate expression in the human equation. Experience in the silk and costume industries, and to a certain degree in the cretonne industry, has convinced me that the native talent of the young artist in America is adequate. But, frankly, the career of a textile designer in America, except in a few rather unusual concerns, offers little scope to the ambition of the talented young American artist. You cannot buy brains of this kind for a song, and you should not be able to do so. And while I hope, with you, for better design in American cottons, hope to live to see the time when through the energy of the mills in New England, cotton goods will be restored to their proper place in the public estimation as desirable textiles, I should rather never see that day dawn than to be responsible by word or act for inducing this young generation of artists to embark in a field as hopeless as textile designing has been up to the present moment. You are not niggardly in other matters be generous in this.

Granted, however, the willingness of this industry to make designing really a profession, and not an unorganized trade, to regulate the rewards of individuals by their capacity to produce merchandise of charm, interest, and salability, you have still to locate this essential if undirected talent. I suggest that some form of contest be organized by the cotton industry of America, offering prizes sufficiently large to attract the highest talent, open to every one, and nation-wide in its invitation.

This may at first sight seem a rather simple method, yet it was in this way that the silk industry discovered some of its most creative artists. The fact that it was necessary to train them in the limitations of the machine, to instruct them in what was possible and what was beyond mechanical power was a very small matter. The leaders in the silk industry who so generously supported the five annual design contests organized by Women's Wear, put a higher value on the creative ideas than upon mere technical accuracy. If the design had charm and interest, if the idea fitted into the prevailing mode or fashion, re-expressing it in technical formalae, was and is a very simple affair. As a matter of fact, the desire to transfer these designs to merchandise was so keen that the mill technicians under the stimulus of the sale executive's earnest enthusiasm, made special efforts and these efforts resulted in the discarding of many time-hallowed rules in print shops and weave sheds and ended in greatly enlarging the horizon of these machines as a creative media. The mechanical designer, the man who actually fits the design for the machine, was just as necessary after we had finished these competitions and obtained the designers we needed as before. He will be just as necessary for you. In all reasonableness his authority should be increased, his dignity enlarged rather than diminished, and he should be brought into sympathetic accord with the creative artists.

I believe that in every textile school in America, there should be a course, if not in design as I use the term here, at least in appreciation and that the future mill technicians you are making in Fall River, New Bedford, Philadelphia, and Lowell, should be more than mere engineers and super-mechanics, should be solidly versed in the fundamentals of good ornament, as well. This can be accomplished through courses of lectures by specialists outside of the school and by repeated exhibitions of historic material and discussion of their artistic merits and possibilities for recreation into design. After all, however, to arrive at a reasonable adjustment between these two types of minds, is something that any man of sense and patience and executive ability should be able to accomplish. You are not attempting to remake a world nor to combine in each individual all of the desirable qualities, but simply to get a certain number of designs and ideas each season that will make the people of America and perhaps the people of the world, place higher value on your cotton fabrics.

I speak with confidence of the native talent of the young American artist. This is not a cherished theory of mine, it is the fruit of ripe experience. But to this experience I will add this thought, if you cannot find in America designers capable of giving to your material the charm that will make them desirable merchandise rather than merely a necessary commodity, your task is hopeless. Each distinct civilization must produce an art of its own and if the American woman and incidently her somewhat slower brother has become aroused to a keen appreciation in matters of dress and home decoration and is satisfied within the limits of her means, with nothing short of the best (and this must be clearly evident to you), it is surely a reasonable assumption that among these millions of appreciative human be-

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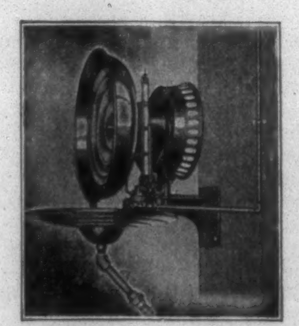

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ings, there must be a few dozen creative artists. They are worth hunting for and I will only say, therefore, in regard to the mechanics of this contest, do not try to win them by paltry prizes, they will not be interested. Among other industries both in and outside of the textile field, there is already a strong competition for their talents and if you want them and want their interest, if you want to get work from the best of them and the best that there have to give, measure your prizes by the dignity of the undertaking and by the limits of your own high aspirations.

Your next task is to urge upon the great museums scattered all over America (and there are many excellent museums well beyond what we are pleased to term the metropolitan areas) to arrange special exhibits so that local artists may have ample opportunity for research into the history of ornament and of course the libraries and the great schools should be included in this list. In "Women's Wear" last design contest, we received several thousand designs from over thirty-six States from one thousand individual artists and prizes were awarded to individuals as far west as California and as far south as Texas. Surely in such an area we might expect to find talent! The selection of the jury is a very important matter. This jury should be as far as possible outside the cotton industry, it should represent rather the users of cotton fabrics, the museums, and the art world, and should contain names that cannot fail to give distinction to the undertaking and assurance to the designers that their work will be considered by men and women in whose understanding and sympathy they have perfect faith.

Once you have these designs, once you are in touch with the artists and have exhibited the results to the cotton industry at large, you will have performed a great work. Making this an annual affair would in a very short time get you in touch with talent that might be of great commercial and artistic value to the industry. But to reap the full benefit of such a course, you must go beyond even this somewhat revolutionary position.

In an undertaking of this kind you will get an expression of views in design from practically every part of America. Women in New Orleans, in Chicago, in San Francisco, or in Boston and New York are in most ways similar. The same style ideas with the allowance for a few months' time permeate all sections of the country. At the same time there are certain local differences, certain local penchants for this or that type of design, for this or that texture or color, and many interesting ideas will come in that can not possibly, for the time, find expression in the merchandise created in your mills. As a matter of fact you do not need a great many new designs each season for when I say new I mean new in the creative sense rather than merely a matter of slight modification. One good design that catches the fancy of the women of America will account for a great deal of merchandise. What you need to reinforce and keep alive this talent, to keep it fruitful, expand its usefulness and back it up with a strong public appreciation is a practical laboratory of design. If this were a chemical problem and you had gathered the best chemical minds in this country to solve it, you would not immediately try to transpose their formulas into industrial systems or processes. They would first experiment in delicate test tubes and machines in laboratories.

The laboratory for the mechanical textile industry is the craft shop. France's great supremacy in silks and fine cottons, England's leadership in fine worsteds and woolens, is built upon the fact that in both of these countries are large groups of hand weavers, dyers, printers and embroiderers. In this country, the distance between an inspiring document in a museum, the creative instinct of an artist and the great printing machine or a stand of Northrop or power jacquard looms, is too great. No mechanical genius can safely span the gulf except possibly in printing, and one of the reasons that American printing has so improved in the last few years is that a number of block printing plants have grown up, which have given opportunity for experimentation and the artists themselves have recreated in America the old Japanese technique of batik. You have heard no doubt many jokes about Greenwich Village and its counterparts in other of our cities and their yearnings for flambuoyant colors and atrocious designs in resist dyeing and with much of this criticism I am in hearty accord. I will add, however, for your subsequent consideration this fact: The best designs ever produced in the silk industry in this country and as good as those produced in any country within our life, have been the result of artists' experimenting in the batik technique and the best designers in the silk industry today with whom I have had the pleasure of a long association, somewhat in the capacity of a teacher, were always expert in the use of this technique.

There is a great market in America for hand made fabrics. There would be an even greater market if these fabrics were produced always under reasonable economic conditions and under a direct, secure guidance, if the equipment was adequate to production, and if the artistic and business direction was sound and capable.

What I have said up to this time I trust may be accepted as the thoughts of a fairly reasonable man; what I am going to suggest from now on will cause, I am afraid, many of my old friends in this industry to revive their previous ideas in regard to my sanity. But I trust that whatever direction these criticisms may take, they will not impute to me a desire to found a new school of art. Far otherwise, I want a business, an actual corporation with, it is true, an artistic head, but with a competent board of directors, who will see to it that within the bourne of the possible, the institution pays.

It should be equipped with machines for dyeing in charge of a good, competent dyer. It should have two or three block printers,

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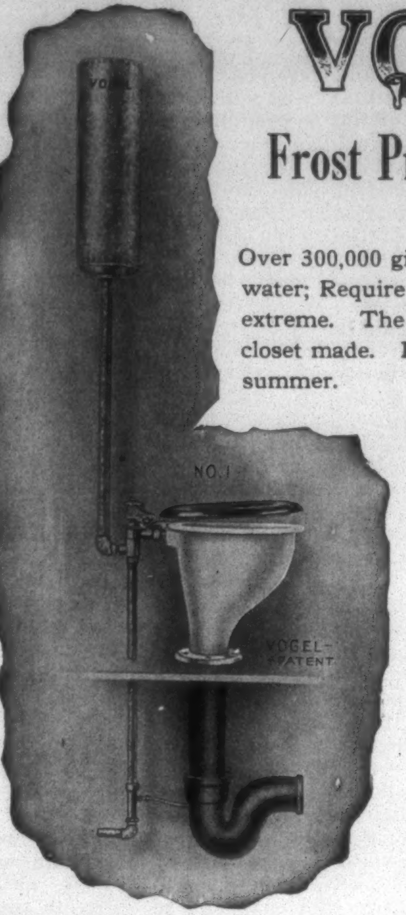

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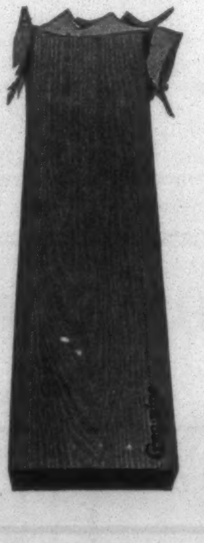

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Distribution of Fine Fabrics

Sensible cooperation between mill and converter, based upon mutual confidence, stands out as one of the chief factors in the successful development of any fine yarn fabric, declares Charles Pinnell, president of Fred Butterfield & Co., who was a speaker at the convention of the National Association of Cotton Manufacturers. Telling of his firm's experience, he laid equal importance on the question of quality. It takes courage, he insisted, for both mill and merchant, to maintain quality when constantly faced with the competition of substitute fabrics, yet this he found to be one of the biggest factors making for constant demand.

Criticising the stubborn attitude assumed by some manufacturers, he declared that mills should not hesitate to regulate production, when their customer is of a type who is "willing to lay his cards on the table." The nearer production can be kept to consumption, more solid will be the foundation, he added, characterizing it as "foolish" for a mill to feel that great production means continuous prosperity.

In this connection, he condemned the tendency of mills to indulge in "self-competition." One form of this evil, he said, is the inclination of some mills, after a demand is created for a good fabric, to jump immediately to enormous production. Sometimes the mill atempts to force the merchant to take the product faster than he can distribute it or, on the other hand, the mill will sell the product to a competitor of the merchant who created it. The result, in any event, Mr. Pinnell declared, is unwise competition and the blocking of the broad plan of distribution.

Another from of "self-competition" he cited was the practice of a mill, not satisfied with a good thing, to start making a sub-count which eventually competes with the mill's own good quality.

A good fabric brought out for many purposes, he said, has a better chance of surviving than a fabric brought out for one purpose, providing it is properly advertised and merchandised. Another help, he said, is to produce something which has an appearance of more value than indicated by actual cost. As a practical example of this theory, he referred to the good makes of full twist voiles, on which mills are able to keep many looms running despite the cheaper slack twist styles.

Mr. Pinnell commended the service rendered by high class cloth brokers as an important link between mill and converter. Their general knowledge and creative ability, he declared, has proven of wonderful value to his firm.

He attributed a large part of his firm's success to the quality of its general personnel. The quality of an organization, the absence or presence of good will between employer and employe, he said, had as much to do with the development of a fine yarn fabric, as any mechanical process.

Mr. Pinnell's address follows in part:

To develop and distribute any special fabric, it is necessary for a mill to have not only good equipment, but also an organization that will bring about co-operation with the distributor and obtain the coordination of effort that brings success. Such co-operation and coordination can be effective only when there is the fullest measure of mutual confidence.

Sometimes when we are working toward a new fabric and we approach a mill to assist us in its development, we run up against a stone wall, instead of obtaining ready co-operation. It would seem that they looked, not at the ultimate results, but first, at the cost and the trouble involved, and how much their plant is going to be upset to get out the experimental sample pieces which generally are numerous.

Some mills have refused to entertain a proposition that meant tedious work and expense, with only a possibility of success, and yet they are eager to make the cloth after a more progressive mill has done the necessary experimenting and stood the expense—and the fabric has developed into large yardage.

"Primarily, the mill management is most vitally concerned in the successful operation of a plant, with production constantly in mind. Therefore, it must depend largely upon the judgment of the distributing organization for the foresight necessary to anticipate style trends. A wide-awake distributor, through its selling association with a great number of diversified industries, can easily see these changes coming.

With the changes of living conditions, women entering the fields of business and sports, there has come a very great change in the mode of dressing. If you look back 20 years and recollect the manner in which women burdened themselves with garments of great number and size, and then compare this picture with the sensibly dressed woman of today, you will quickly appreciate why certain fabrics have ceased to be and new ones have been developed to fit in with the later vogue. There is no mystery in style changes. Some men disregard changes of time and go on doing business the same way their grandfathers did. Such a man wakes up some day to find he has a blacksmith shop where there is need only for a garage.

Discernment—to know a good fabric when you see it—is something that no one can tell another how it is done. It is intuitive, a natural instinct that comes from experience and from being in constant touch with the requirements of the industries.

The problems of actual manufacturing are yours, and the last few years have amply proven that you are perfectly able to meet them when the necessity is once put up to you. But there is one problem
TWO—Distribution of Fabrics
of manufacturing, the seriousness of which is possibly best seen by the distributor, and that is—maintenance of a quality, once that quality is established.

Why is it that on a cloth of the same weight and construction, some mills must always meet the discouraging competition of price, and still be looking for business; while others are always able to ge a premium for their product, and are continuously sold up? It seems to me that the answer is in some of the established fabrics of national reputation, as for instance pequot sheetings, soisette, or—our Normandy voile—the standard of quality of these has never varied from the day of their introduction to the buying public—except possibly to improve them. Maintenance of quality is of the utmost importance, if we wish continuous demand.

But it takes courage to maintain the original quality when constantly faced with competition of substitute fabrics. Many mills and merchants lacking that courage, or lacking experience and thought of future, are willing (sometimes seemingly anxious) to lower the standard of their fabric which has become popular, in order to meet the demand for something "just as good."

Advertising people tell us that in a great many advertised products, quality is maintained until the demand is created, and then allowed to fall off upon the assumption that advertising will carry it; which accounts for the disuse and final disappearance of once popular products.

It happens that our lingette is at present one of the most popular fine yarn mill products, and we know of no other popular cloth on the market that has a greater number of inferior imitations, all apparently trading on the popularity of lingette. But we also know that the superior qualities of lingette are necessary to give satisfaction to the ultimate consumer, and that their satisfaction means continuous business; so we are most careful to maintain the original quality. Experience leads us to believe that because of these facts, lingette will continue in popular demand when imitations are a drug on the market.

In my own organization, we are convinced that quality (and I mean maintained quality—which a buyer knows to be the same season after season—year in and year out) will create a constant demand for the merchandise it represents.

Emerson says: "He who builds a mouse trap and builds it better than any other man, even though his house be in a forest, the world will wear a beaten path to his door."

Must Accept Losses.

Ability and willingness to change and accept the losses entailed are also essential to the success of a mill or merchant. Frequently, owing to sudden style changes, we find it necessary to "scrap" an entire line and lose thousands of dollars, to start fresh along the new line that appears to be desirable. I have even seen the entire character of our business change several times (in my short career) to meet changes of tariff and of methods of distribution, and it is due to this ability to change, that a great measure of our success is undoubtedly due.

If mills wish to keep up with the order of the times and to have the reputation for making up-to-the-minute stuff, they also must be ready to make changes, to add equipment and, if necessary, to "scrap" equipment, in an effort to produce a winner. Some of the mills recognize this fact.

Now, a mill owning a standard advertised fabric, and having its own distriubting organization, or one closely associated with a commission house that sells its finished products to the trade—will accept the advice and opinions of the distributing organization and will change—increase or decrease production as the demand fluctuates.

So—mills distributing through organizations like ourselves, when they are fortunate enough to have on their looms large yardage of a well known advertised fabric, should give the same co-operation, if they are interested in the continuous success of that fabric.

Some of you may say that this is a merchant's problem, his responsibility, and that he must take the gamble on his judgment—that the mill's responsibility begins and ends with the making of the fabric. This might be so if the merchant is promiscuous in his buying and goes shopping for prices—but when he is willing to lay his cards on the table and place himself in the hands of one or two mills—I maintain that the success of the fabric is of mutual interest and that, therefore, the mill should co-operate in the regulation of production. In this way congestion is avoided and orderly distribution is possible.

Several mills have given us wonderful co-operation (to our mutual profit) and we have seen such co-operation work out with extraordi-

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nary success in the case of our Normandy voile. In the production of this fabric, the Arnold Print Works have always given us fullest co-operation—with the result that there has never been a piled-up surplus to be disposed of, the fabric has always been in demand, and at the end of each year, we find we have distributed a larger quantity than in any year previous—this in spite of numerous imitations.

When a fabric is brought out for a single purpose, it is our observation that unless the distribution is controlled in the hands of one, there is no feeling of personal pride or interest, no one wants to particularly feature or advertise it—the possibilities are not considered—it is just ground out by the mile and so is killed by over-production and poor merchandising. On the other hand, a fabric good for many purposes has a much better chance of surviving, and a variety of uses means a steadier and more even demand. The one who has the judgment and good fortune to select such a fabric and standardize it, has something, which properly advertised and merchandised, is a permanent success.

Another thing that helps greatly in the success of a fabric is to produce something which has an appearance of more value than is indicated by the actual cost. Even as staple a fabric as voile (I am now speaking of the good makes of full twist voiles) when properly designed and finished, has this appearance. This possibly explains the number of looms which are kept running on them in spite of the cheaper or so-called slack twist voiles. In this case sightliness, combined with good wearing qualities, has made a successful fabric.

Evils of "Self-Competition."

Constructive competition we all welcome, but in dealing with a mill, the merchant is often confronted with what might be termed "Self-Competition." To create a demand for a new product is a slow and tedious process, and often through either lack of thought or a short sighted policy, that mill which has produced the good fabric is not satisfied to wait for the orderly full return. They apparently want to jump immediately to enormous production basis, and either attempt to force the merchant to take the product faster than he can distribute it, or sell it to competitors, which creates unwise competition and blocks the broad plan of distribution. Undoubtedly, the temptation to do this is great, but again the progressive mill will see the need for co-operation.

Another form of this self-competition is practiced by a mill who, after producing a fine quality of fabric, is not satisfied with a good thing, but will then start in to make a sub-count cloth of very similar appearance, which goes out eventually in competition with his own good quality.

There is a third form of self-competition which was clearly disclosed by the post-war liquidation, and that is, the lack of thought given by most mills as to who is buying their product and whether the purchaser is buying for legitimate uses or for speculative reasons. Since the war, we have had several mills tell us that this was one of the main reasons for the enormous inflation and the consequent terrible liquidation. But apparently, like physical pain, this recent lesson has been forgotten by many.

Isn't it foolish for a mill to feel that great production means continuous prosperity, when the goods they are making are not going into consumption? Don't you think that sooner or later there must be an accumulation that will backfire, and that the nearer the production can be kept to consumption, the more solid is the foundation?

In the scheme of development and distribution, there is a link between the mill and the merchant, which is seldom given credit for its share of the success, and that link is the broker. We use almost exclusively, the services of high class brokers, extending to them, with proper limitations, the same confidence we give to the people of our own organization. Their general knowledge and creative ability has proven of wonderful value to us. Of course, it is easy to imagine serious abuses if great care were not used in their selection, but to my way of thinking, high class brokers are indispensable. This, of course, does not mean that we discourage visits of mill men. To the contrary, we fully believe that it would be an excellent thing if they visited the trade oftener, kept in constant and more personal touch with their customers. It is this amount and exchange of thought that often leads to new ideas.

When our president asked me to talk before you, I asked him why he "picked on me," and his reply was that he wanted somebody from an organization that stands out prominently today as developers and distributors of fine yarn fabrics. So in talking of organization—that important factor of development and distribution—I cannot help talking from a personal standpoint. Organization has been a particular hobby of mine in business, and let me say that I think that a man's organization is a direct reflection of the man himself.

It seems to be the idea of many executives that the organization must sell themselves to the boss, but I contend that it is the place of the boss to sell himself to his own organization and gain for himself the respect that begets confidence. What we sow, we reap.

Interest and friendliness in the men under us begets interest in our business.

Loyalty begets loyalty.

Co-operation begets co-operation.

If we are fair and just, we are treated in like manner.

And it is the quality of an organization that has as much to do with the development and distribution of a fine yarn fabric as any mechanical process.

One must be careful in the selection of the personnel of his organization, to pick men, who have dependability, loyalty, honesty and common sense. One must develop these men, give them every confidence, recognize their effort, stand behind them, and when they prove

(Continued on Page 33)

Why a Morse
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The Morse silent chain is used because of its superiority based on the design of the exclusive "rocker-joint" construction,, the very highest grade of material and heat treatment, the extreme accuracy in manufacturing and the engineering assistance in the designing of textile drives by engineers trained in this particular line and backed by the long standing reputation of the MORSE CHAIN COMPANY.

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Leicester, Mass.

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SOUTHERN
TEXTILE BULLETIN
Member of Audit Bureau of Circulations

Published Every Thursday by
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A Calamity.

While at lunch at the Merchants Club in New York last Friday about two hours after the Government report was issued the head of one of the largest cotton goods commission houses said to us:

"That report is a calamity. It will not be realized for some time but it is nothing short of a calamity."

We heartily concur in that statement but we hope that the cotton manufacturers of the South will realize its meaning before it sinks into the minds of those of other sections.

When cotton was 27 cents early in October we tried to impress upon the mill men of the South the fact that the first of October was usually the most advantageous time to make purchases.

Two weeks ago we predicted that cotton would be much higher in March if not earlier.

We now state that cotton must advance to some point that will materially reduce consumption and that that point has not yet been reached.

Roger Babson and the other business experts were last week advising against purchases of cotton and cotton goods and one of the cotton statistics "experts," the same one who predicted 17 cents when the market was at 22 cents, was predicting a 6 cents decline from 30 cents.

Last April when cotton reached 30 cents it was an "overbought" market, that is, almost every mill had bought to fill its requirements and more. When the bear drive was put on there was no one left to buy cotton and under such circumstances it was easy to drive prices down.

Now we have an "under bought" market, that is, very few mills have bought to fill their requirements, and with millions of bales yet to be bought by the mills no professional speculator can see a profit in making a bear drive against such a purchasing power.

The circumstances are entirely different but the fear of a repetition of what happened last April has prevented the mills from buying cotton this fall and has doubtless cost Southern mills more this fall than it did last spring.

With a crop of 10,248,000 bales and a world carry-over of American cotton August 1, 1923, of only 2,500,000 bales, we have a total supply of 12,750,000, whereas the consumption of American cotton last year was 12,632,000 bales.

It is bad enough to be able to figure only 118,000 carry-over August 1, 1924, which means the absolute certainty of an enforced curtailment next summer, but the real calamity is in the prospective yield of the 1924 crop.

Our recent crops have been:

1921	7,920,000
1922	9,760,000
1923	10,248,000

In the face of these three yields, the last of which was upon the greatest acreage effort ever put forth by the South, we must raise at least a 13,000,000 crop, which appears now to be almost an impossibility.

Should we produce another 10,000,000 bale crop the supply will be 2,500,000 less than the requirements and the mills using American cotton will be forced to remain idle at least one-fourth of the year.

Last spring was favorable to cotton but should there be rainy spells next March and April, there will be a mad scramble for this crop cotton.

In our opinion it is no longer a question of what the bulls and bears can do to the price of cotton but the greater powers of supply and demand will be in control.

We caution the mills against paying too much attention to the lack of demand for goods and yarns.

Marshall Field & Co., in their weekly review, say:

"Current wholesale distribution of dry goods exceeded materially that of a week ago and considerably ahead of that of the same week last year."

The sales of Montgomery Ward & Co. were $15,165,000 for October, 1923, as compared with $10,288,000 for October, 1922.

As long as the ultimate consumer is buying, the orders will eventually find their way to the mill.

The jobbers and converters may fight prices for awhile but with the public buying upon their present scale, they must either buy goods or go out of business and they are not going out of business.

We have now exported almost 2,000,000 bales, or 300,000 more than last year, and the consumption of American mills is now approximately the same as last year. The co-operatives have 1,700,000 bales of cotton in their control.

Until the jobbers and converters yield in, their fight against prices, there will probably be an increasing curtailment, but the mills might as well curtail now as later in the season, for a considerable amount of curtailment will be forced by a shortage of cotton.

It is not going to be so much a question of the price of cotton but of getting a supply of cotton.

Mills that are able to do so should fill their warehouses with sufficient cotton to run them until September of next year. If afraid of present prices the cotton can be hedged.

Forget what happened last April and look the present situation in the face.

A scarcely adequate supply with a tremendous buying power ready to stop any decline.

Excess of exports due to improving conditions abroad.

Soon to face the probability of not being able to raise sufficient cotton in 1924 to meet the demand.

The Government report of last Friday was a calamity indeed.

What Did McMahon Do With the Million?

The following extract from the report of the Executive Council of the American Federation of Labor will be interesting:

> "In the New England textile industry the employers not only sought to impose a wage cut of 20 per cent in addition to a previous one of 22½ per cent, but also to lengthen the working week from 48 to 54 hours. Under the leadership of the United Textile Workers of America the textile workers ceased work for ten months and resumed with the wage cut in effect prior to the 20 per cent reduction. The 48-hour week was also maintained for most of the industry. The labor movement gave such solid financial support to the Textile Workers' Union that close to one million dollars was disbursed in maintaining the strike."

Textile workers in New England will want to know what McMahon did with that million dollars. They will be asking that question of McMahon and Sarah Conboy and Riviere, and they will wait a long time for an accounting.

They have never made any public accounting for more than a few thousands of that million dollars. As a consequence they have lost nearly all of the textile workers they had organized in New England.

Here is some more interesting data for the textile workers, taken from the official reports of the A. F. of L. In 1920, McMahon's union was paying per capita to the A. F. of L. for 104,900 members.

For the last two years McMahon has been paying per capita to the A. F. of L. for 30,000 members. Anyone who knows the methods of the A. F. of L. will readily understand that the actual membership of the U. T. W. all over America today is much less than that number, as the small unions in the A. F. of L. that support the Gompers machine invariably pay per capita upon a round number of members far in excess of their actual membership in order to give them votes in the A. F. of L. convention.

It is doubtful if the U. T. W. has 15,000 members left in the American continent, but taking their own figures, we see that in three years McMahon has succeeded in reducing the membership of the textile workers by 74,900 and the labor movement has given him a million dollars for doing it.

In his speech to the convention McMahon pleaded for more money to organize the textile workers in the South. He did not propose to try to get back the $75,000 he has lost in New England because he knows the New England workers have had enough of him and so he proposes to go South and try to build up a new dues-collecting agency where his misdeeds are not known.

McMahon even had the nerve to refer to his organization as a "militant" union in spite of the record he has established everywhere for yellowness.

Our readers have doubtless been under the impression that they were reading a regular editorial of the Southern Textile Bulletin, but all above the paragraphs are extracts from a labor union paper, the "Lawrence Labor," published at Lawrence, Mass.

We have never said anything worse about Thomas Failure McMahon. We did not accuse him of getting a million dollars out of the operatives of the South, but it has been estimated that he got $250,000 from them.

The Lawrence Labor accuses him of desiring to build up a new dues-collecting agency and it seems to us that somewhere, sometime, we have expressed a similar idea.

We can assure the Lawrence Labor that the mill operatives of the South are fully aware that Thomas Failure McMahon is a dues-collecting four-flusher who seeks only to ply his trade and that the mill operatives do not intend to again contribute to his upkeep.

"When thieves fall out honest men get their dues" or at least learn the truth.

Who Got Spanked?

The Amoskeag Manufacturing Company suddenly cut the price of ginghams from 17½ cents to 15½ cents per yard and it is reported that their manager said he did it in order to give the Riverside & Dan River Mills a good spanking.

Almost the next day cotton jumped 2½ cents higher and we can not help wondering who got spanked.

News

[redacted]

Jesse Spencer Tanner, age 22, secretary and treasurer of the Parsley and Tanner Hosiery Mills, Spindale, N. C., was instantly killed early Sunday morning when the car in which he was riding went over an embankment. The young man's neck was broken when he was pinned beneath the wreckage. The accident occurred on the Pineville road near Charlotte.

Mr. Tanner was a son of S. B. Tanner, president of the Henrietta Mills, and a brother of K. S. Tanner, head of the Tanner group of mills of Rutherfordton and Spindale.

Funeral services were held in Charlotte on Monday.

W. Frank Smith Dead.

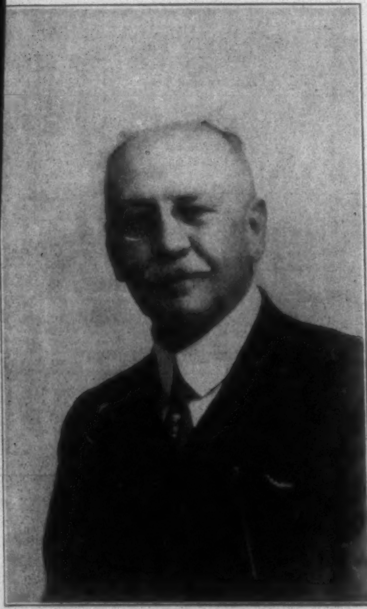
W. Frank Smith, master mechanic at the Lynchburg Division of the Consolidated Textile Corporation, died suddenly at Lynchburg on the night of October 29th. Mr. Smith had been at Lynchburg for the past six years, going there from Lindale, Ga., where he was connected with the Massachusetts Mill of Georgia, and ranked high in his profession.

ides numerous friends over the th, the deceased leaves a mother, . Amanda A. Smith, of Chatta-ga; one brother, one sister, a ghter, Mrs. Gladys Batson, of chburg; two sons, Lee and nk, Jr., of Danville, Va. The re-ns were interred at Dalton, Ga., ember 1st, with Masonic honors.

James H. Maxwell Dead.

ames H. Maxwell, of Greenville, thern representative of the ever Starch Company, died in eenville on Tuesday morning of s week. Mr. Maxwell contracted eumonia while attending the Tex-e Exposition in Boston last week.

Ir. Maxwell was one of the most pular and best liked men in the uthern textile industry. He was rn at Pendleton, S. C., and at an rly age entered the mercantile siness, being connected with the eenville store of F. W. Poe. In 1906 he was elected president of the Reedy River Manufacturing Company, at Conestee, S. C., and successfully operated the mill until part of the mill and the dam was washed away by a flood.



JAS. H. MAXWELL

Fifteen years ago he became Southern agent for the Keever Starch Company, and through his ability as a salesman and his pleasing personality, he built up a large Southern business for his company.

Funeral arrangements had not been made at the hour of going to press.

International Textile Exposition.

We enjoyed the International Textile Exposition at Boston, Mass., last week and the exhibits were good, but the attendance was exceedingly poor. We predict that it will be four years before another such Exposition is held.

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MILL NEWS ITEMS OF I

Gastonia, N. C.—Parkdale Mills, Inc., have awarded contract for humidifying equipment to the Bahnson Company, Winston-Salem, N. C.

Geneva, Ala.—The Geneva Cotton Mills have awarded contract for humidifying equipment to the Bahnson Company, Winston-Salem, N. C. Robert & Co., engineers.

Tuscaloosa, Ala.—W. B. Davis, president of the W. B. Davis Cotton Mill Company, of Fort Payne, has arrived in Tuscaloosa with a force of men to begin work on the hosiery mill he is to erect here. The building will cost $20,000, exclusive of equipment and site.

Lumberton, N. C. — Construction work on the Mansfield Cotton Mills has been completed and machinery is arriving and finished product should be turned out in a very short time. Lockwood, Greene & Co., engineers of Charlotte and Boston, are supervising this work.

Charlotte, N. C.—Lockwood, Greene & Co., engineers of Charlotte and Boston, are supervising the construction of the H. M. Wade Loft Building, Charlotte, N. C. The building is rapidly nearing completion. The entire building has been leased and lessees expect to occupy it by the middle of November.

Carrollton, Ga.—A second knitting mill will be added to the industries of Carrolton. This has been assured following the organization of the Carrollton Knitting Mill Company. The new mill will manufacture ham and beef bags used by packing houses, and practically the entire output has been sold to a firm in Chicago, Illl. It will be under the management of Pomp Shafer, of Carrollton.

The mill will occupy one section of the Consolidated Company's building in Depot street, which is being remodeled. Work is being rushed at top speed for an early opening.

Summerville, Ga.—A large addition will practically double the output of the Summerville Cotton Mills, of this place, one of the largest manufacturers of cotton ducks in northwest Georgia. Contract for the machinery will be made within a few days. The addition was voted at a recent meeting of stockholders.

In addition to the enlargement of the mill, a large number of new cottages for the operatives will be built. Work on these has already started.

This mill now uses between 1,200 and 1,500 bales of cotton per month and the enlarged plant will consume almost double that amount, it is said. This necessarily will bring many new people to Summerville and will increase the pay roll of the mill.

Col. John D. Taylor, who has been president of the mill since its organization, nearly 20 years ago, has been re-elected for another year, as has E. Montgomery, who has been superintendent for the same length of time.

Charlotte, N. C.—It is learned here that the Gaston Manufacturing Company, of Gastonia, N. C., is seeking a new location for its plant and has made a proposal to Burlington, N. C., financial interests to move to that city provided local capital to the equivalent of the appraised value of the Gastonia plant can be raised.

A Burlington chamber of commerce committee has accepted the proposition and has visited Gastonia and made an appraisal of the mill. The mill has 10,080 spindles and 133 looms. Some additions to machinery will be made when the plant is moved. It is understood that the mill has been successfully operated but that removal is necessary owing to cramped quarters. J. S. Love is manager of the mill.

Rome, Ga.—Satisfactory labo
ditions in Rome have secure
this city a brand new $200,000
ting mill that will begin opera
by the first of the year. The
plant will employ 400 people,
the pay roll will run close to
000 annually.

The new factory will be one
dozen operated by the Chester
ing Mills, of Chester, Ill.;
Rickman, president and ge
manager of the company, is in
at present, letting contracts fo
renovation of the old Printup
house, which has been bough
Mr. Rickman. As soon as this
is completed, machinery will be
stalled and the factory will b
operations as soon thereafte
workers can be employed.

There will be 500 knitting
chines in the local plant, Mr. R
man states. A number of these
be brought from Collinsville,
where the company has been o
ating a plant. Some months

urer.

Franklin Process. Co. Purchases Cohannet Yarn Mills.

Greenville, S. C.—The Franklin Process Company, of Providence, R. I., the Southern subsidiary of which, the Southedn Franklin Process Company, is located in Greenville, has completed negotiations for the purchase of the Cohannet Yarn Mills at Fingerville, in Spartanburg county, it was learned through H. J. Haynsworth, Greenville attorney. The price is understood to have been in the neighborhood of $200,000. Mr. Haynsworth represented the purchasers.

B. B. Gossett, of Charlote, formerly of Anderson, the retiring president, James E. Mitchell, James E. Mitchell, Jr., J. A. Hayes, of the James E. Mitchell Company of Philadelphia, and Thomas Hildt, president of the Merchants' National Bank of Baltimore, were the principal stockholders of the Cohannet Mills.

B. E. Geer, of Greenville, is president of the Southern Franklin Process Company.

The Cohannet Mills, one of the oldest cotton manufacturing plants

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MANUFACTURING COMPANY
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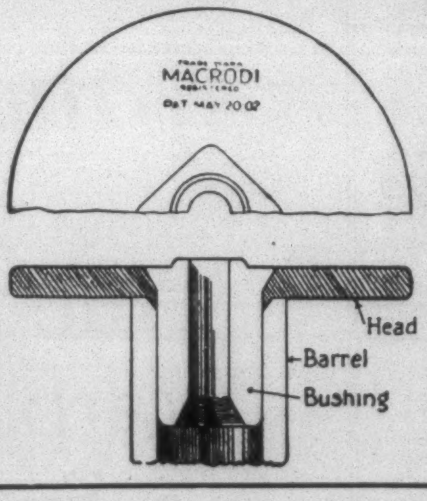
MONTICELLO, GEORGIA
MILLS AT MONTICELLO GA. AND TOECANE, N.C



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Write for particulars of the added traverse with corresponding increase in yardage—an important feature of this spool.

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Supervision of Landscape Construction
Inspection and Maintenance

Largest Landscape Organization in the South

in Spartanburg county, has 12,000 spindles. It is understood the plant will undergo extensive improvements, present machinery being replaced with new and the village made more attractive for the employees. The plant hereafter is to be known as the Franklin Process Spinning Mill Company. No change in management is contemplated, it is understood.

Cotton Plants in $7,200,000 Merger in South Will Enlarge Operations.

West Point, Ga.—The biggest financial action ever recorded in this section was concluded at the meeting of the stockholders of the West Point Manufacturing Company and the Lanette Cotton Mills, held at the office at Lanett, Ala. The merger joins the West Point and the Lanett Companies under the name of the West Point Manufacturing Company. The new company is capitalized at $7,200,000, embracing 72,000 shares of the par value of $100.

The directors are Harry L. Bailey, Walter H. Holbrook, Joseph M. Jackson, Joshua B. Richmond, Charles E. Riley, Albert E. Stone, Jr., and William H. Wellington, of Boston; George H. Lanier, of West Point, Ga., and Lafayette Lanier, of Langdale, Ala.

The officers who will serve the consolidated company are: President, Joshua B. Richmond, Boston; vice-president, George H. Lanier, West Point, Ga., and secretary and treasurer, Joseph M. Jackson, Boston.

Improvements, additions and enlargements aggregating several hundred thousand dollars are now in course of construction. The modern schoolhouse in Lanett, Ala., will cost approximately $100,000. The addition to the Lanett bleachery and dye works, including the filtering plant, represents an additional expenditure of $150,000.

Numerous houses are under construction in the five mill villages of Lanett, Shawmut, Langdale, Fairfax and Riverview, Ala. All of these towns are directly connected with West Point by the Chattahootchie Valley Railway, an electric car service and the West Point-Fairfax bus line.

Textile Stocks Firmer.

Both common and preferred stocks of the Southern textile mills showed a firmer tone at the end of last week than heretofore with an increased demand at slightly advanced prices, according to the weekly review of Southern mill share movements prepared by R. S. Dickson & Co., Gastonia, N. C., and Greenville, S. C.

However, no important changes were noted in any of the issues during the week. The average of 25 most active Southern mill shares for the past week stands at 139.40, which compares with 139.20 for the preceding week. On October 19 the average stood at 139.00 and on October 12 the average was 138.52.

Hemphill Co., Pawtucket, R. I., Establishes New York Office.

The Hemphill Compnay, of Pawtucket, R. I., builders of "Banner" Full Automatic Circular Hosiery Machines, have opened an office at 350 Broadway, New York, where they have on exhibition 10 of their latest model machines featuring the split-foot, and also the new pointed heel machine.

The office is in charge of Maurice L. Frost, vice-president of the company, who will have as his associate Eugene M. Gunning, who has been the Western representative of the company for the past 15 years.

Activity of Textile Machinery.

Washington, Oct. 31.—Textile machinery in operation during September this year was practically the same as in August, and in September, 1922, with the exception of worsted combs and woolen spinning spindles, which shows a slight decrease in activity.

Worsted spindles, however, in operation, were slightly more numerous than during September, 1922; but 1.1 per cent less than during August, this year.

The figures made public yesterday by the Bureau of Census, Department of Commerce, are based on reports from 951 manufacturers, operating 1,122 mills. The report, which does not include data for the Daniel Boone Woolen Mills, John & James Dobson Company, Faulkner & Colony Manufacturing Company, Merrill Woolen Mills or Shelby & Kemp Co., follows:

Of the total number of looms wider than 50-inch reed space, 76.9 per cent were in operation for some part of the month of September, 1923.

The active machine hours reported for wide looms for September, formed 77.6 per cent of the single shift capacity, as compared with 76.3 per cent for the month of August, 1923, and 72.4 per cent for September, 1922.

Of the total number of looms of 50-inch reed space or less for September, 1923, 79.8 per cent were in operation at some time during the month, and the active machine hours for these looms represented 67.4 per cent of the single shift capacity as against 63.8 per cent in the preceding month, and 71.3 per cent in September, 1922.

The number of carpet and rug looms reported for September, 1923, was 9,094, of which 84.4 per cent were in operation for some part of the month, the active machine hours reported for these looms represented 80.9 per cent of the single shift capacity of the looms, as compared with 79.9 per cent in August, 1923, and 80.9 per cent in September, 1922.

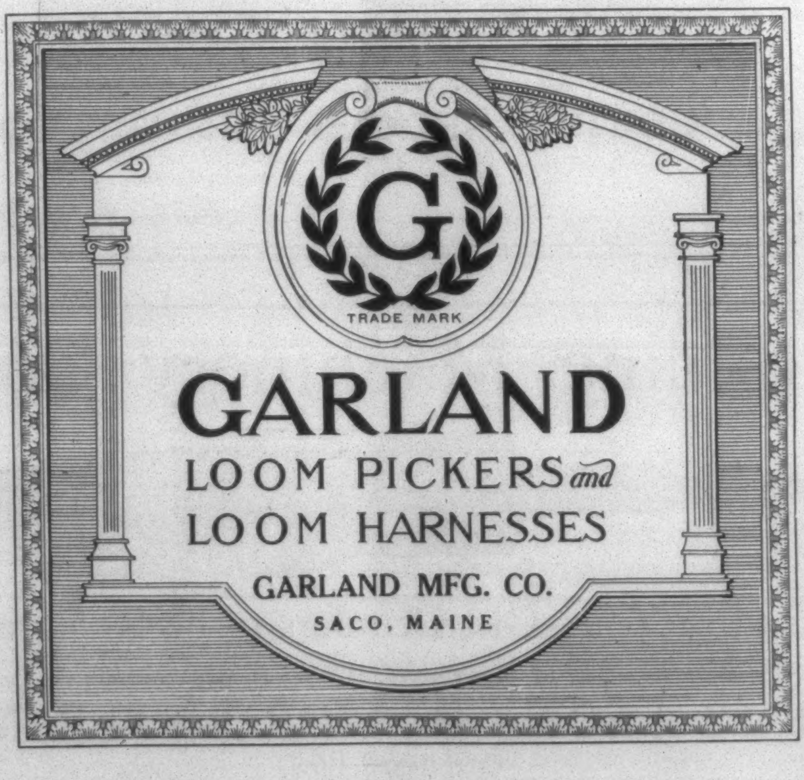
Of the total number of woolen woolen spindles reported in September, 1923, 83.9 per cent were in operation for some part of the month. The active woolen spindle hours reported for this month represented 88.9 per cent of the single shift capacity, as compared with 89 per cent in August, 1923, and with 88.1 per cent in September, 1922.

Of the total number of sets of cards reported for September, 1923, 86.3 per cent were in operation at some time during the month. The active machine hours for cards were equal to 94 per cent of the single shift capacity in September, 1923; 93.2 per cent in August, 1923, and 91.3 per cent in September, 1922.

Of the combs reported for September, 1923, 76.0 per cent were in operation for some part of the month. The active machine hours for this month were equal to 85.5 per cent of the single shift capacity.

Growth of Hungarian Textile Industry.

Figures indicating the expansion in the Hungarian textile industry during the post-war years were quoted by the Minister of Commerce in answer to a recent interpellation in the Hungarian Parliament. These figures show that since 1920, when there were 69 textile factories in the country, 55 new enterprises have been established, while 11 of the former factories have been improved and enlarged. Seventeen additional factories are in process of construction or equipment.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Are all STANDARDS OF MODERN TEXTILE MILL EQUIPMENTS.
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STEPHEN ARLEIGH, South Car. Representative, Greenville, S. C.
HERBERT BOOTH, Tenn.-Ala. Representative, Chattanooga, Tenn.

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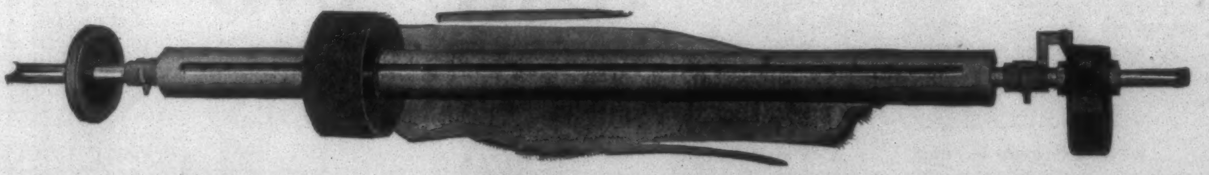

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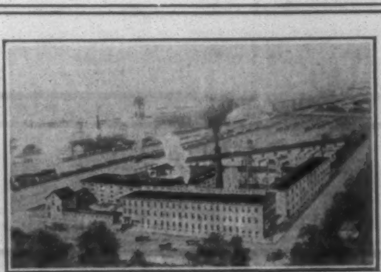

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"HIGH GRADE"

Bobbins, Spools and Shuttles

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Design.

(Continued from Page 19)

younger men if possible, and hence a little more flexible to the suggestion of the art director, since in all probability these men will be asked to depart somewhat from the narrow technique they have developed in the last fifty or sixty years of vain attempt to compete in price with the mechanical printer. A few hand looms and an opportunity to have special constructions made for them on power looms, an embroidery machine, a few pounds of bees wax, a set of carving tools, a log of old teak wood or an apple stump and a can of gasoline and you have the beginning of a real craft guild, a potential laboratory of design.

This organization should be near the great sources of museum inspiration and very close to the creative minds in the costume, theatrical and decorative fields and make special things for these markets. It should hold from year to year or possibly from season to season, exhibits of work open only to the stockholders, where designs may be sold to the industry or experiments conducted for the industry and where new ideas can be first seen by those most interested. After a reasonable interval of time, in which the machine producers can take advantage of this information, for which by the by, they should have to pay, the designs can be shown publicly as works of art and sold as such.

It is natural that to such an organization the young artists who have a craft instinct, will gradually be drawn and since the revenue producing potentialities of this organization, dependent on this direction both artistic and commercial, will offer them a reasonable career and reasonable security, you will soon develop the ideal types of designers for each of the mills. A little familiarity with mill technique, possibly a short course in the textile school will be all that is necessary to transform them into the best trained group of designers the world has ever seen. On the other hand, many of them might find in craft work, as they do in Central Europe, and in England a satisfactorily remunerative life. Others might feel that the institution itself offered them the best field for their talents and might be established there as master craftsmen with a financial interest in all designs that were bought from them by the industry.

Now I realize, gentlemen, as well as you do, that it is not the custom to pay artists very much money. They are traditionally poor, they should be in want and their lives should have all the spectres and shadows of poverty in order to give it that romantic touch we find so delightful in La Boheme. But in sober fact we have tried to worry along on old, hacknied designs, until nobody particularly wants them any longer. We have tried style piracy and as a nation are reputed to be the quickest operators in this direction that history has any record of. If this is a compliment, we are welcome to it. We have tried to train designers with their nose against the machine, and the sum total of all your efforts for 135 years is that cotton fabrics have lost to large degree their equality with the other great textile fibers. Mill treasurers watch a great deal more closely the vicissitudes of the raw market, the question of discount and special concessions, terms and deliveries, than they do the matter of style and design, in spite of the fact that this is the greatest and possibly within our lives the last luxury market of the world.

In respect to the proper remuneration for artists, this depends largely of course on the quality and desirability of the work produced by the artist. I wish to draw your attention in this connection to one branch of so-called commercial art in which the American artists easily excel the world. I refer to advertising. If you have any hallucinations in your mind about artists as a class in this country being poor, consult some of the leading commercial artists who make designs for advertising, certain of the simple necessities of life and a few of the luxuries and you will quickly change your ideas. They are ladies and gentlemen of keen business minds, well aware of their value and as a profession are extremely well paid. Consequently their work is excellent and they lead the world in this particular profession. On the other hand if you wish to call them designers and not artists, and by this play of words determine the amount of money they should receive, I urge you to try to hire from one of the great wholesale dressmakers in New York City or one of the great specialty shops, some of their creative talent and you will understand why it is that the wholesale dressmakers of New York City are the finest costumers in the world today and why the clothes of the average American women are easily the best in the world. This kind of talent, I am now describing, is the kind you want in the cotton business and no system or efforts, mechanical, industrial, or commercial will compensate you for the absence of this genius. With them you may easily lead the world in the production of cotton goods that everyone will want, without them the finest systems, starting with the museum and the art school and ending in your design rooms in the mills, will be constantly and eternally fruitless.

May I say this in conclusion: No man really succeeds in any undertaking who places the material immediate rewards beyond his sense of service. I realize that men in business pride themselves on being practical and are more or less successful in concealing their true natures, but the fact remains that an intellect capable of directing a great mill is big enough to measure the surer values of life. I have endeavored in this brief talk to outline to you certain rather general methods for obtaining designs and patterns of salable artistry. It is quite a reasonable business proposition to improve designs for purely selfish motives. It is perhaps essential that you should do this for the sure preservation of the institution you represent. Yet I am deeply sincere when I say I believe the men who will actually make the effort to elevate cotton design to the place it

(Continued on Page 30)

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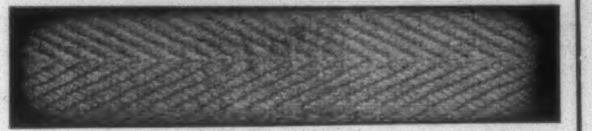

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On account of changing product from yarns to cloth, we offer subject to previous sale the following:

2—LOWELL SPOOLERS, 1 120-spindle and 1 100-spindle, for 4½"x6" spools, fitted with L. M. S. bobbin holders.
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5—LOWELL YARN REELS, adjustable for 54" and 72" skeins.
13—GANGS UNIVERSAL WINDERS, Model 50.

This machinery is in splendid condition and may be seen in operation.

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Pulverized Coal.

(Continued from Page 17)

tinued, that time has now arrived, and it is the opinion of many who are competent to judge, that stokers have reached the apex of their use and must henceforth be on the decline.

There are several means of pulverizing coal, two of these being specially prominent. One of the latter is a method of striking the coal by revolving paddles and blades. If a piece of bituminous coal is tossed in the air and struck by a baseball bat it is broken into very small pieces. Similarly, if the coal is continuously struck to an advisable extent by revolving paddles and strips of metal, to which there is no limit, the desired fineness of pulverization is attained. A fan on the pulverizer shaft draws the coal through the machine and blows the pulverized coal into the furnace.

The other method of pulverizing referred to consists of rolling the coal against a horizontal steel ring by means of wheels on pendulums attached to a vertical shaft. The process is continued until the coal is sufficiently fine to be lifted by a fan and blown into a storage bin from which, by suitable mechanism, it is blown into the furnace.

Both methods seek to pulverize the coal to the proper fineness and blow it into the furnace with the proper quantity of air for combustion, thoroughly mixed with it, allowance being made for the air which enters the furnace for cooling.

Cotton Crop Placed at 10,248,000 Bales.

Washington, Nov. 2.—A decrease of 767,000 bales in the prospective cotton crop as compared with a month ago was shown today in the Department of Agriculture's forecast of 10,248,000 bales, based on conditions prevailing October 25. The report was the first of its kind ever issued in November and had been awaited with interest by the cotton world in view of the scarcity of cotton and the diversity of opinion as to the exact size of this year's crop.

The forecast was based on the condition of the crop on October 25, which was 47.8 per cent of a normal, compared with 49.5 on September 25 this year, 52.6 on October 25 last year and 43.2 on that date in 1921, indicating a yield of about 128.9 pounds per acre.

The condition of the crop on October 25 and the forecast of production by States follow:

Virginia, condition 88 and production 53,000.
North Carolina, 70 and 1,010,000.
South Carolina, 53 and 740,000.
Georgia, 31 and 610,000.
Florida, 22 and 12,000.
Alabama, 39 and 615,000.
Mississippi, 36 and 520,000.
Louisiana, 13 and 320,000.
Texas, 57 and 4,300,000.
Arkansas, 37 and 680,000.
Tennessee, 35 and 330,000
Missouri, 43 and 151,000.
Oklahoma, 43 and 735,000.
California, 86 and 49,000.
Arizona, 86 and 49,000

Production of all other States is 40,000 bales.

About 86,000 bales in addition to California are being grown in lower California, Old Mexico.

Hongkong Knitting Industry.

The knitting industry, which was started about twenty years ago in a small way, has now become one of the most important and flourishing businesses of Hongkong, says Consul Leroy Webber, Hongkong, in a report to the Department of Commerce.

Employment has been provided for about 4,000 persons, and it is claimed that about 80 per cent of the local Chinese demand for socks and other knitted products is supplied by these factories. Chinese living abroad supplied the necessary capital, and introduced modern machinery and western methods of knitting.

Predicts Great Increase in Cotton Goods Exports.

Chicago.—Because of its unparalleled power facilities and other factors, the United States is gradually spinning and weaving more of its own cotton, so that in time it will be sending out a larger proportion of the manufactured production as compared with the raw material, than has been the rule in previous years, said J. Paul Goode, of the University of Chicago, in addressing the Chicago Association of Commerce meeting on "America's Opportunity in World Trade." He also stated that the co-operative marketing of one-fourth of the entire cotton crop this year means that many of the growers who were earning little money will now get a good price for the raw product.

He showed pictures of large textile plants to emphasize how the compounding of steam, steel and brains have eliminated spinning and weaving in American homes and has resulted in plants in which a 13-year old Caucasian girl can tend 1,000 spindles and one woman can tend 16 large looms making ginghams.

Professor Goode predicted that within a few years the United States, which now has a foreign trade of about 14,000,000,000 as against 16,000,000,000 for Great Britain, will be leading the world. In reviewing the nature of the foreign trade of the leading countries, he pointed out that wool and silk were the third and fourth largest imports of the United States, with cotton the largest item of export. With Great Britain the second largest item of import is raw cotton and the fourth raw wool, with manufactured cotton as the largest article of export and wool manufactures second largest.

The lack of coal and the small amount of other power in France explains why the French have put greater efforts into the making of fine articles or luxuries, in which connection he pointed out that France imports cotton and wool and exports wool manufactures, silk manufactures, linens and wearing apparel.

Trade of the future will be along the meridians or from the temperate to the tropical lands.

Southern Mill Men Who Attended Textile Exposition

Among the Southern mill men who attended the International Textile Exposition in Boston last week were the following:

L. L. Arnold, "Cotton," Atlanta, Ga.
Harold Armitage, Universal Winding Co., Charlotte, N. C.
William H. Bahan, Treas. Bahan Textile Machine Co., Greenville, S. C.
Thomas H. Battle, Pres. Rocky Mount Mills, Rocky Mount, N. C.
W. E. Beattie, Pres. Am. Cotton Manufacturers Association, Greenville, S. C.
George F. Bahn, J. H. Williams & Co., Charlotte, N. C.
C. A. Burgess, Am. Moistening Co., Charlotte, N. C.
Mollie Beattie, Franklin Process Co., Greenville, S. C.
M. A. Boger, Sec. Wiscassett Mills, Albemarle, N. C.
Fred Bryant, with J. E. Sirrine, Greenville, S. C.
L. R. Brumby, Asst. Supt. Ospray Mill, Porterdale, Ga.
R. B. Beal, Sec. Chamber of Commerce, Spartanburg, S. C.
L. L. Brown, Supt. Clifton Mfg. Co., Clifton, S. C.
Joe Bridger, General Manager, Bladenboro Cotton Mills, Bladenboro, N. C.
R. C. Butler, Asst. Supt. General Asbestos and Rubber Co., Charleston, S. C.
Edwin M. Clapp, General Electric Co., Atlanta, Ga.
William R. Collier, Ga. Ry. and Power Co., Atlanta, Ga.
Wilkins Cagle, Graton & Knight Mfg. Co., Atlanta, Ga.
B. C. Cook, Bonner & Barnwell, Charlotte, N. C.
C. W. Coker, Socono Products Co., Hartsville, S. C.
A. B. Carter, Mill Supply Dealer, Gastonia, N. C.
C. S. Doggett, Director Textile School, Clemson College, S. C.
T. M. Denning, Supt. Wiscassett Mills, Albemarle, N. C.
Wade Denning, Asst. Supt. Wiscassett Mills, Albemarle, N. C.
D. C. Dunn, Stafford Co., Charlotte, N. C.
Norman Elsas, Sec. Fulton Bag and Cotton Mills, Atlanta, Ga.
W. A. Erwin, Treas. Erwin Cotton Mills, West Durham, N. C.
W. A. Erwin, Jr., Mgr. Erwin Cotton Mills No. 3, Duke, N. C.
P. W. Ellis, Asst. Supt. Anderson Cotton Mills, Anderson, S. C.
F. E. Forster, Draper Corp., Atlanta, Ga.
W. L. Ferguson, R. I. Warp Stop Equipment Co., Charlotte, N. C.
F. S. Fayssoux, Student Textile Dept., Clemson College, S. C.
F. W. Glover, Textile Mill Supply Co., Charlotte, N. C.
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Wool mills in Italy are generally busy completing orders for the winter season, Commercial Attache H. C. MacLean, Rome, reports. Fine goods are in small demand due to recent increases in price.

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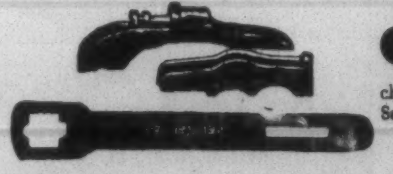

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WRITE FOR SAMPLE

Design.

(Continued from Page 27)

deserves, both from its history in New England and elsewhere will be impelled to this course not alone by self interest but by the desire to make the world a little lovelier, to give to life an added richness, and to make beauty a little more accessible.

South Carolina Mill Meet.

The annual meeting of the South Carolina Cotton Manufacturers' Association was held at Spartanburg on Tuesday of this week. The morning session was featured by an address by President Riggs, of Clemson College. The speaker stressed the necessity of closer co-operation between the mills and the textile department at Clemson College. He pointed out how such co-operation will be of great benefit to the industry in South Carolina and will permit of a more lasting good from the efforts of the textile schools to train the younger men for responsible positions with the mills.

The afternoon session was devoted to business and was executive in nature.

The meeting was presided over by James D. Hammett, president. It was decided that the next meeting shall be held in June.

Leroy Springs Donates Fund for College Building.

Col. Leroy Springs, of Lancaster, S. C., who recently sold his majority holdings in a chain of cotton mills to Lockwood, Greene & Co., will finance the building of a gymnasium at Presbyterian College, Clinton, S. C., to any amount needed. Some time ago he gave the college $65,000 for the building, but this was found inadequate to carry out the original plans and the college determined on a cheaper building.

Colonel Springs was unwilling to pay for the cheaper construction and wrote the president of the college to go ahead with the construction on the original plans and that he would take care of any deficit. The building will cost around $100,000.

Henry Ford to Build Mill.

It is reported upon good authority that Henry Ford is to build a 10,000 spindle 300 loom mill at Detroit, Mich., for the manufacture of automobile top cloth. It is also reported that Lockwood, Greene & Co. are doing the engineering.

Two Million Acres, Cotton Abandonment.

Washington.—The "record breaking" abandonment of cotton lands, reported by the Department of Agriculture in its first November estimate, was 5.1 per cent of the acreage under cultivation on June 25, the Crop Reporting Board announced officially on Saturday. This means that the board believed nearly 2,000,000 acres of cotton lands, which were seeded in the early part of the season, will not be worked.

Labor conditions in the Southern States are thought to have contrib- to the steady emigration of the negroes to the North, the Southern uted to the large abandonment. Due planters have been without as large a supply of pickers as usual and the scale of pay has been higher. When it was evident that it would cost more to pick the cotton and send it to the market than the return the planter would obtain there was abandonment, especially in those areas which were hard hit by the weevil and the army worm.

Details of Abandonment.

During the ten years 1913-1922, the board reported that the average acreage abandonment was 2.8 per cent.

The heaviest abandonment this year was reported in Georgia, Mississippi and Oklahoma. By States, the estimate of the acreage abandonment and the ten-year average follows:

	Pc.	Pc.
Georgia	11.6	2.5
Mississippi	9.0	2.5
Oklahoma	8.0	5.2
Missouri	8.0	3.6
Arkansas	7.0	2.3
Louisiana	5.7	3.0
Tennessee	5.0	1.8
Alabama	4.0	2.3
Texas	2.3	3.1
South Carolina	1.5	1.9
North Carolina	0.5	1.6

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Notice.

Boyce W. Allen, my son, 15 years of age, has left my home without my consent. Any information will be appreciated. F. J. Allen, No. 1 Vaughn St., Spartan Mills, Spartanburg, S. C.

The Properties of Raw Cotton.

(Continued from Page 7)

amount of "pectic" material. Very little is known about the substances which come under this designation, except that they are excellent jelly-forming agents. For example, the use of apple pulp in jam manufacture depends largely on the fact that it is rich in pectic matter, and so provides the jelly substance. Whatever pectic material there may be in cotton, it is certainly intmiately associated with the cellulose. Some of the newer processes for bleaching, in which the fabric is first steeped in acid before the alkali "boll," are apparently designated to loose the pectic matter more effectively.

Pigments. That Egyptian cotton is darker than American, and that some varieties are darker still, is well known, but what the pigments are is quite unknown. An American planter, A. W. Brabham, has produced a green variety, and writing recently to the Indian Textile Journal holds out the rather fantastic prospect to the Indian farmer of being able to grow cotton in all the colors of the rainbow.

Cellulose is the most important constituent of cotton. This has been the subject of an enormous number of researches but even yet it is by no means clear how its constituent elements, carbon, hydrogen, and oxygen, are linked together. Chemists have proved recently that when cellulose is boiled with dilute acids for some time it is broken down entirely to glucose, which incidentally gives a supply of alcohol when fermented. It appears, therefore, that cellulose is a structure built up of one kind of brick, namely, glucose units, but how these are assembled together is still very uncertain. The physicists have been examining cellulose by the X-rays and some of them have come to the conclusion that each fibre of cellulose is a concrete mass of tightly-packed crystals.

One reason why cellulose has baffled chemists for so long is that it will not dissolve in any simple solvent without changing in some subtle way. The most familiar solvent is a strong solution of copper oxide and ammonia. This beautiful blue liquid dissolves a normal sample of cellulose very slowly and the solution is very viscous, like glycerin. (A sample was exhibited.) If this solution is poured into the water or a dilute acid, the cellulose is regenerated as a white, fibrous mass. Unfortunatenly, cotton cellulose is apt to suffer some subtle changes during technical operations, which generally weaken the material and modify its affinity for dyes without altering its general appearance. These changes are commonly grouped together under the name of "tendering" and may occur, for example, when the cotton is exposed to strong sunlight, carelessly treated with mineral acids, left in contact with air when soaked in hot alkalis, over-bleached, etc. Fortunately we have in "cuprammonium" something that reveals most of these effects, for if the cellulose has been tendered it will dissolve more readily, and its solution will be thinner than that of the normal material. On the other hand, the changes that cellulose can undergo when treated with various chemicals make it a most valuable material in many ways. It is only necessary to mention mercerization, artificial silk, and gun cotton to illustrate this point.

Physical Properties.

A report has been prepared at the Shirley Institute on the state of the published information concerning the physical properties of cotton cellulose, and it is pointed out in the review that a remarkable number of properties seem never to have been investigated. Scarcely anything definite has been written even about such an important factor as the coefficient of friction of cotton against cotton, or cotton against glass, steel, wood or other material used in the construction of machinery. Of course, it may not seem so obvious in the case of many other properties that they have any practical application, but one never can tell. Even the power of cotton to conduct sound waves may have to be measured, if as is very likely search has to be made for the best material with which to line the walls of concert halls, or broadcasting stations, so as to diminish muffled tones and echoing.

Usually, one of the simplest properties of a solid to measure—in fact, a schoolboy's exercises—is the specific gravity or relative heaviness. Even this important factor has not yet been properly measured in the case of cotton, for there are very many difficulties in the way. For example, the hairs are so irregular in cross section that the volume cannot be measured except by immersion in a liquid. If water is used for this, the cotton behaves like a sponge, soaks up a great deal and swells, and even if a liquid like mercury is used, there is still the hollow lumen to account for.

The strength and elasticity of cotton have often been tested, but here, again not sufficient attention has been paid to the variability of the material. That is, the number of tests made have usually been too small to give a true average value. However, it is well established that the cotton hair is about as strong as a steel wire of the same thickness, whereas it is not very elastic, steel being about thirty times as good and glass ten times in this respect.

Certainly, one of the most remarkable properties of cellulose is its affinity for moisture. When dry cotton is brought into the ordinary atmosphere it increases in weight very rapidly indeed, and also increases somewhat in bulk. This swelling can be demonstrated in a striking manner by dropping a compressed plug of cotton into water, when it will be seen to grow about three times longer almost at once. (The experiment was shown.) One could imagine what would happen if a large compressed cotton calender bowl got wet. Cotton does not swell at all like this in petrol or other non-aqueous liquid, but in caustic soda solution the effect is very much greater still, and is the basis of the process of mercerization.

The spinning of cotton depends very largely on the degree to which the single hairs cling together when brought into intimate contact. This clinging power has recently been measured at the Shirley Institute in

(Continued on Page 34)

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Need of Improvement in Yarn Machinery.

(Continued from Page 12)

only a little shorter than those we wish to preserve then the results are not so satisfactory. Possibly there is no way of preventing this in a machine where the material is handled as in carding. But if it should prove possible to redesign the card and the comb, producing a machine of a hybrid nature, then a sliver of a very different character could be obtained. Given an improved picker lap and a new method of removing fiber from the doffer of this new carding machine, may we not hold up as an ideal card sliver a strand possessing the uniformity of the drawn sliver and the straightened paralleled fiber now seen only in the combed sliver?

In observing the operations that involve the use of drawing rolls one of the first impressions received is that as a means of pulling apart locks of fiber they are very different. But as we undertake an examination of those operations where drawing rolls are smaller and are required to run at rather high speeds, the defects in them and their action become more and more apparent. It is a convnction of the writer that progress in the manufacture of cotton yarn lies along the line of improvement or change in our methods of selecting fibers for spinning which will give us greater uniformity of fiber length in the masses from which we spin, or else a method of drawing which will recognize the fact that at present our most carefully prepared rovings are composed of widely varying lengths of fiber.

Must Simplify Spinning.

The efforts of inventors to increase the speed of ring spinning will be fruitless so long as we do not alter our methods of drawing or improve our apparatus for drawing. It is quite apparent that so long as we unite fibers in a continuous strand by twisting them together that it will be necessary to straighten them to arrange them in parallel order and to have the number of fibers in a cross section as nearly uniform as possible. And it is also apparent that the best way of doing this is one that involves the fewest amount of manipulation.

A critical study of cotton yarns and our methods of producing them have left the writer with the firm conviction that something must be done to simplify our yarn manufacturing operations and make them less expensive.

Possibilities of Circular Loom.

In the field of fabric production the loom still reigns practically supreme, and in this connection the writer would point out the possibilities that lie in a circular loom as well as those that lie in an extension of the field of knitting, more especially the possibilities that are present in the method of cloth production known as warp knitting.

In closing, the writer would like to point out the fact that during the last few years new principles have come into use in many of our arts and that to consider that the art of cotton manufacture has reached a state of perfection is to acknowledge that it is already on the decline. We have passed through a very successful century in this industry; the coming one is going to be equally filled with improvements. Shall we who are now engaged in the industry produce them or will improvements come from some new and unknown source?

President's Address.

(Continued from Page 9)

existing between this State and competitors outside of New England is bound to lessen in time. If the mill managements could feel certain that they were to have encouragement in the future and that future legislative handicaps would not be put in their way, I feel sure that they would be only too glad to plan their enlargements here at home instead of in the Piedmont where they are now looking. Before they can safely build they will require further proof that the public want them. The surest way for the public of Massachusetts to show their intentions would be to consider how the laws could be modified to allow longer operation through the medium of two shifts.

I think the tide is turning and that at least there will be no more discouragement put upon industry. The signs are pointing clearly that New England wants its industries and is determined to encourage them.

Now, mills are not built for a day nor for a year. Eighteen months ago I ventured to predict that Massachusetts, as a cotton manufacturing center, would not expand until the legislative disadvantages, under which she operated as compared with other States, ceased to

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exist, but that well-run Massachusetts mills would continue to exist and prosper. Both of these predictions have become true. Well-run Massachusetts mills have been successful and prosperous through a period when a great disparity has existed between Massachusetts and the other sections of the country as to cost of production, but no new mills or additions have been built.

Thiss disparity is gradually lessening and we will compete with other sections on more and more even terms through the next few years. Therefore, as an investment the best-run New England mills are second to none. If you have studied the papers presented at our meetings and the exhibition at Mechanics Hall you will see a small glimpse of where our future lies. We have the men, we have the climate. We have the capital in the form of the savings of our people. We have the schools of design, the textile schools, the art schools, the nearness to our markets and to that most important market of fashion, New York City. By taking advantage of all of these things and continuing the reputation for quality, which New England products now have and have never lost, we can maintain New England's position as the workshop of the United States for fine, high grade, well designed, and tempting material.

Our advantages are many. Our handicaps are almost entirely self-made. With a very little encouragement we have little to fear. We wait only for surer signs of this encouragement which I feel are bound to come.

Distribution of Fine Fabrics.

(Continued from Page 21)

their worth, see that they share in the reward that comes to a successful organization.

Favoritism, or placing in authority, men temporamentally unfit or lacking in ability—disorganizes—and I have seen some splendid organizations, which have taken years to develop, utterly ruined through this mistake.

"Personally, I have tried to follow these precepts in my own organization in the endeavor to maintain the interest and enthusiasm of everybody, from the top to the bottom, for the game we are playing.

On the principle that there is a limit to what a man can do well, we are departmentalized. The head of each department is given the full authority and confidence of a partner—and they are partners in every sense of the word, down to a share in the profits.

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It is a combination of all these things that makes for that valuable though intangible asset—goodwill—and you can imagine that with an organization of this kind, the problems of distribution are better met, and we are happy in our work.

In conclusion, the development and distribution of fine yarn fabrics calls for courage—

Courage to make good merchandise and to maintian quality;

Courage of our convictions—to buy and to sell properly;

Courage to sit tight with a load during the introduction period;

Courage to still sit tight during the following period of unfair competition;

Courage to apply the Golden Rule and to demand that our customers apply the same rule.

In other words, after we have organization, after we have foresight, discernment, good manufacturing and good distribution, it seems to me that it is courage (with all that the world implies) that carries us through to success."

Cloth Samples from Portugal.

Samples of cloth used in the manufacture of work clothing in Portugal, with prices attached, have been received from Consul General W. S. Hollis, Lisbon, and are on file in the Textile Division of the Bureau of Foreign and Domestic Commerce at Washington, where they will be available to interested persons. They will also be sent for inspection to the District or Co-operative offices of the Bureau upo nrequest.

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Properties of Raw Cotton.

(Continued from Page 31)

the case of several varieties of cotton. It is most probably true that the clinging power was experienced when the number and grouping of the convolutions in the different hairs which lay together were most uniform.

Another important property which comes into play when cotton hairs are spun together is the rigidity or twisting force. This property depends on the thickness and shape of the thing twisted, which obviously complicate the measurements in the case of cotton. However, rigidity has been tested at the institute for a large range of cotton varieties, and one very interesting fact has been discovered. It appears namely, that normally developed hairs of all sorts of cotton have about the same volume of material—that is, the shortness of staple in one case is balanced by extra thickness, and long stapled cottons are slender. It seems, therefore, that a hair with a much smaller volume could be regarded as an undeveloped one. On the other hand, some hairs which happen to be the first generation of a cross between two pure strains were found to be much bigger than the average, which is not at all surprising.

Control Board Advocated for English Cotton Goods Industry.

The formation of a control board is being actively urged by a committee representing the English cotton goods industry. Spinners, on the whole, are in a precarious financial condition, excepting fine spinners and certain manufacturers of fancy goods. With the easing of raw cotton prices, piece goods buyers have been more cautious. Stock lost have been moving for export but usually at unremunerative prices. Inquiry is more active but there is a wide range still between bids and Manchester quotations, says Trade Commissioner Richard A. May, London, in a report to the Department of Commerce.

Italian Silk Production.

Provisional figures for this year's silk production confirm the optimistic predictions that have been made during the course of the season, says Commercial Attache H. C. MacLeon in a report to the Commerce Department. The production of cocoons is estimated at 12,365,833 kilos as compared with 9,457,633 in 1922 and 8,797,168 kilos in 1921. The increase is most marked in the districts of Piedmont, Lombardy and the Venete, which are the most important silk producing provinces.

Port Elizabeth Mohair Market Reported Quiet.

The Mohair market was very quiet in August with prices slightly easier as compared with those quoted during July. Shipments to the United States in August were quite small, amounting to only 10,418 pounds valued at $4,897, while total shipments for the year ended August 31 amounted to 2,970,304 pounds worth $1,763,566, Consul Monnett B. Davis, Port Elizabeth, informs the Department of Commerce.

German Wool Manufacturing Industry in July.

The situation in the wool manufacturing industry of Germany remained unchanged during August as compared with July. Worsteds and combings went very slow but prices remained firm. Transportation difficulties rendered the situation more difficult in the occupied territory. The fall of the mark caused an almost complete standstill in sales and greatly delayed payments, Vice Consul Nathaniel P. Davis, Berlin, reports.

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Cotton Goods

New York.—With the cotton market showing further advances last week, trading was rather slow in the primary markets. Buyers continued to hold off and sellers were not willing to sell for future delivery on the basis of present prices. Prices were somewhat irregular, with two leading lines of dress ginghams showing a reduction of two cents a yard. Advances, however, of half a cent a yard were named on denims and bleached goods for deliveries running as far ahead as March. Some business was placed at the bigger prices, but bleached goods trade on the whole was light.

The higher cotton market kept print cloths and sheetings firm and higher. Convertibles were firm but reports indicate that converters are not placing future business except on specialties and novelties. They bought staples only as they actually needed them.

Production in Eastern mill centers showed a further decline during the week. Mills did not get sufficient orders to keep them employed at full time and were not willing to buy further supplies of cotton at the higher prices.

Print cloths showed an advance as the week ended, some business being done for early spring delivery as much as ⅜ cent over prices prevailing at the middle of the week.

Print cloths sold at 9 cents for 60x48s, 10½ cents for 64x60s, 12 cents for 68x72s and 6¼ cents for 27-inch 9.50s. Some contracts were sold at 10½ cents for January-February, but many mills would not sell beyond December, preferring to stand as having prices withdrawn for the time being.

Sheetings sold at 14¾ cents for 3-yards, 10 cents for 5-yards and 10¼ cents for 31-inch 5-yards. Some sales of 4-yard 37-inch goods for the bag trades were made at 12¼ cents, which was ⅜ cents up from the quotation of Thursday, and some few mills would sell spots at 12 cents. They declined contracts.

Sateens were advanced ¼ cent to ½ cent a yard on small trading. Osnaburgs were marked up from ¼ cent to ½ cent. Drills were marked up and sold at ¼ cent higher. Wide sateens were quoted at 50 cents to 52 cents, wide drills from 48 cents to 52 cents and wide moleskins from 50 cents to 52 cents per pound.

There was not much change in the fine goods markets throughout the week, the bidding being light and most of the trading being in spot goods bought up by converters who regarded them as cheap.

There was very little business in cotton duck. Some mills withdrew quotations and would take business subject to mill acceptance only. Quotations were unchanged in most quarters, some sellers being willing to deliver stock goods at prevailing prices. Some houses reported fairly large inquiry but only a small amount of business resulted.

On ginghams, some repeat business for spring was in evidence. The market is still unsettled owing to price revisions and the drastic curtailment in gingham production. The full effect of this curtailment has not yet made itself felt in the markets. It is reported that gingham production is now lower than it has ever been at a time when other goods are moving fairly well.

In the tire fabric markets, business continued on a hand-to-mouth basis, with little desire shown to contract for further supplies. Prices showed very little change.

Cotton goods were quoted at the close of the week as follows:

Print cloths, 28-inch 64x64s, 8 cents; 64x60s, 7¾ cents; 38½-inch 64x64s, 10½ cents; brown sheetings, Southern standards, 16½ cents; denims, 2.20s indigo, 24 cents; tickings, 8-ounce staples, 20 cents; prints 9⅛ cents, nominal; dress ginghams, 21½ and 24 cents.

Paris Artificial Silk Market Active.

The artificial silk market in France is very active, due largely to the Japanese disaster. Some spinners are refusing to accept further orders, and, in general, the mills have sufficient to keep them very busy up to the end of the year. Prices have increased from 15 to 20 per cent, according to a report from Commercial Attache Chester Lloyd Jones, Paris.

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The Yarn Market

Philadelphia, Pa.—With the sharp rise in cotton prices, yarns in this market moved up from 1 to 2 cents a pound. Prices as the week ended were on a basis of 52 to 53 cents for 20s two-ply and 57 and 58 cents for 30s. On carded hosiery yarns, the basis was 45 to 46 cents for 10s. Further advances in prices are anticipated on account of the low Government crop estimate and the higher prices that are expected to follow it.

Very little new business was done at the new prices, and most market factors believe yarns will be rather quiet for some weeks to come. One rather large combed yarn order was reported, but other sales were of small lots for future shipments.

Both spinners and yarn dealers were perplexed as to the proper course of prices. Mills are faced with much higher production costs at the new cotton prices and yet they have been able to sell yarns in any quantity for the last few weeks and prices are still under a profitable basis. Dealers did a fairly good business in stock yarns. Stocks however are said to be very low.

A little weakness has developed among combed yarn mills making coarse ply counts, these comprising numbers under 36s. Their position heretofore was considerably improved when excess inventories were cleaned up during the buying spell of a few weeks ago. The piecemeal orders which were placed then have begun to run out and they are in the position of spinning plants making fine sizes.

A much better condition is reported to prevail among mills making singles for many of them are sold up solid to spring and are unconcerned with passing market sentiment. Quotations were advanced previous to the announced Gvoernment report. Since Saturday feeling runs in favor of further increases but action awaits a settled market.

Some very low quotations were heard of in ply combed peeler warps. A lot of 36s went for 68 cents and some 30s at approximately 65 cents. The amount of new business going through is spotty and quantities usually small, below 10,000 pounds in individual cases.

Yarn prices were quoted in this market as follows:

Two-Ply Skeins.

8s	46	a47
10s	47	a48
12s	47½	a48½
14s	48	a49
16s	49	a50
20s	51	a52
24s	53	a54
26s	54	a55
30s	56	a57
40s ordinary	66	a67
40s high grade	68	a69

Two-Ply Warp.

8s	47	a48
10s	48	a49
12s	49	a50
14s	50	a51
16s	51	a52
20s	52	a53
24s	54	a55
26s	55	a56
30s	56	a57
40s ordinary	66	a67
40s high grade	69	a70

Frame Spun Carded Yarn on Cones—Cotton Hosiery Yarn.

8s	44	a45
10s	45	a46
12s	46	a47
14s	47	a48
16s	48	a48½
18s	48½	a49
20s	49	a50
22s	50	a51
24s	51	a__
26s	52	a__
30s	54	a__
40s	62	a__
30s double carded	56	a__
30s tying-in	52	a__

Single Skeins.

4s to 8s	43	a45
10s	43½	a44½
12s	44½	a45½
14s	45½	a46½
16s	47	a49
20s	48	a50
24s	51½	a53½
26s	53	a55
30s	53½	a55½
40s	62½	a64½

Single Skeins.

8s	--	a46
10s	--	a46½
12s	--	a47½
14s	--	a48½
16s	--	a49½
20s	--	a51
24s	--	a54½
26s	--	a55½
30s	--	a57
40s	--	a65

Carpet and Upholstery Yarn in Skeins.

8s and 9s 3-4 slack	--	a46
8s and 9s 3-4 tinged tubes	--	a44
8s 3-ply hard white warp twist	--	a44
10s and 12s, 3 and 4-ply hard white yarn tubes and skeins	--	a47
Same, warps	--	a48

Two-Ply Combed Peeler Skeins and Warps.

8s to 10s	61	a__
20s	64	a__
24s	67	a__
30s	70	a__
40s	80	a__
50s	85	a87
60s	95	a57
70s	1 05	a1 15
80s	1 20	a1 30

Combed Peeler Single Yarn on Cnoes.

10s	58	a__
12s	58½	a__
14s	59	a__
16s	59½	a__
18s	60	a__
20s	61	a__
22s	62	a__
24s	63	a__
26s	66	a__
28s	67	a__
30s	68	a__
36s	71	a__
38s	72	a__
40s	73	a__
50s	85	a90
60s	95	a1 00
70s	1 05	a__

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One 20" Hoefer Drill Press, combined lever and worm feed, 4" vise on plate.

One E. Gould & Co., Newark, N. J., Gear Cutter to include 24 dies of different pitch, motor attached or belt driven.

One Double Arbor Emery Wheel Stand.

Shafting, Belting and Tools included in this sale.

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Wanted—One second hand for night carding; one who thoroughly understands fixing H. & B. machinery. Address A. L. Dillworth, Caswell Cotton Mills, Inc., Kinston, N. C.

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WANT position as overseer weaving. Familiar with variety of weaves and can furnish excellent references. Address No. 3805.

WANT position as superintendent, overseer weaving. Thoroughly trained in all departments of mill, I. C. S. graduate. Understand jacquard weaving. Age 30, married, no bad habits. Good references. Address No. 3806.

WANT position as overseer spinning or as assistant superintendent by man who can get results, either yarn or weave mill. Best of references. Address No. 3807.

WANT position as overseer spinning. Age 37, 12 years as overseer. First class references. Address No. 3808.

WANT position as superintendent, or overseer large card or spinning room. High class man, experienced and practical, references to show good past record. Address No. 3809.

WANT position as superintendent of large yarn mill. Have been overseer and superintendent in some of best yarn mills in North Carolina. Have fine record as to quality and quantity at low cost. Address No. 3810.

WANT position as carder or spinner or both. Capable of handling large room in first class man. Long experience, fine references. Address No. 3811.

WANT position as carder or spinner. Experineced mill man, now running card room at night but want day job. Good references as to character and ability. Address No. 3812.

WANT position as superintendent. Practical man of long experience and ability to get good results. Now employed as superintendent. Good references. Address No. 3813.

WANT position as master mechanic. Have had 24 years experience in cotton mill shops both steam and electric drive. References. Address No. 3813-A.

WANT position as overseer weaving on Draper looms, plain white goods preferred. Now employed, but desire better job. Good references from good mill men as to character and ability. Address No. 3815.

WANT position as overseer carding. Good man, now employed, but wish better position. First class references showing good past record. Address No. 3816.

WANT position as superintendent of yarn or weave mill. Long experience in carding, spinning and weaving, and winding. Can get quantity and quality production at lowest cost. Age 39, good character and references. Address No. 3817.

WANT position as superintendent. Practical manufacturer of ability and experience. Good manager of help. Fine references. Address No. 3818.

WANT position as overseer weaving. First cuass weaver in every respect, sober, reliable and hard worker. Experienced on wide variety of goods. Good references. Address No. 3819.

WANT position as superintendent or manager of yarn or cloth mill in the Carolinas. Now general superintendent of large mill, have held job satisfactorily for three years but have good reasons for wanting to change. Good references. Address No. 3821.

WANT position as superintendent, overseer carding or assistant superintendent on yarn or plain cloth mill. High class, reliable man, good manager of help. A-1 references. Address No. 3822.

WANT position as overseer weaving. Strictly high class man of good character; long experience in weaving, best of references. Address No. 3823.

WANT position as superintendent, or carder or spinner. Now employed as spinner in mill on fine yarns and am giving entire satisfaction, but want larger place. Good references. Address No. 3824.

WANT position as superintendent, carder or spinner. Practical man of long experience in good mills. Fine references. Address No. 3825.

WANT position as master mechanic. Now employed, but want larger job. Many years experience as mechanic, steam and electric drive. Excellent references. Address No. 3826.

WANT position as superintendent or traveling salesman. Experienced mill man and can give excellent references. Address No. 3827.

WANT position as superintendent. Have held position as such in some of the best mills in South and give satisfactory references to any mill needing first class man. Address No. 3827.

WANT position as master mechanic. Long experience in mill machine shop, fully competent to handle large job. Fine references. Address No. 3829.

WANT position as overseer carding or spinning, or superintendent. Practical man who has had many years experience as superintendent and overseer and can get satisfactory results. Best of references. Address No. 3821.

WANT position as superintendent of yarn mill or carder or spinner. Thoroughly familiar with these departments and am well qualified to handle either a room or a mill. Good references as to character and ability. Address No. 3832.

WANT position as superintendent of mill in North Carolina making yarns or print cloths. Now employed as superintendent of 27,000 spindle mill making 30s hosiery yarn and 64x60s print cloth. Am giving satisfaction but have good reason for making change. Best of references. Address No. 3833.

WANT position as superintendent or overseer carding. Long experience as both and can get good production at low cost. Would like to correspond with mill needing high class man. Address No. 3834.

WANT position as overseer of carding. Good worker of long experience in number of good mills. First class references to show past record. Address No. 3835.

WANT position as superintendent or overseer carding and spinning. Now employed, but wish larger place. Competent, reliable man who can give satisfaction in every way. Good references. Address No. 3836.

WANT position as superintendent or manager. Have had long experience as superintendent and am high class man in every respect. Can handle mill on any class of goods made in South. Want to correspond with mill needing high class executive. Excellent references from reliable mill men. Address No. 3837.

WANT position as overseer weaving. Practical weaver who can get big production at the right cost. Fine references. Address No. 3838.

WANT position as overseer weaving. Can handle any fabric made in South. Have had over 27 years experience from loom fixer to overseer weaving and was promoted steadily by one of largest mills in the South. Married, have family, religious worker, good manager of help. Can give excellent list of references. Address No. 3839.

WANT position as superintendent, prefer South Carolina or Georgia. Now employed as assistant superintendent and weaver and am giving entire satisfaction. Have good reasons for wishing to change. Excellent references. Address No. 3840.

WANT position as overseer weaving, prefer job of fancies. Have been weaver for past 10 years with one of the finest mills in the South. Excellent references to show a fine record. Address No. 3841.

WANT position as superintendent, yarn mill preferred. High class man who is well trained and has had long experience. Best of references. Address No. 3842.

WANT position as superintendent. Now employed as such, but want better job. Good weaver as well as superintendent and get operate weave mill on very satisfactory basis. Address No. 3843.

WANT position as superintendent, carder or spinner. Now employed as superintendent. Long experience as both overseer and superintendent and can get satisfactory results. Address No. 3844

WANT position as overseer carding. Have had long experience and can furnish best of references from past and present employers. Address No. 3852.

WANT position as overseer weaving. Experienced in wide variety of fabrics and can give satisfaction. Now employed. Best of references. Address No. 3853.

WANT position as dyrer, 12 years experience on long and short chain work, raw stock, beam and Franklin machines. Can handle any size jobs on cotton. Good references and can come on short notice. Address No. 3854.

WANT position as overseer carding. Experienced an dreliable man who can handle your room on efficient and satisfactory basis. Good references. Address No. 3855.

WANT position as superintendent of medium sized mill or weaver in large mill, white or colored goods; 20 years as overseer weaving, slashing and beaming in number of South's best mills. Have held present place for nine years and am giving entire satisfaction. Address No. 3856.

WANT position as superintendent of plain or fancy goods mill, would consider offer of medium size mill at reasonable salary. Thoroughly conversant with all departments. Address No. 3857.

WANT position as superintendent of yarn or cloth mill, ginghams preferred; age 40, have family; 22 years experience, 8 years as carder and spinner and assistant superintendent; have held last position as superintendent for 7 1-2 years. N. . mill preferred. Good references. Address No. 3858.

WANT position as overseer weaving or superintendent. Long experience in good mills and can get good results. Best of references. Address No. 3859.

WANT position as overseer carding; age 33, married, 14 years in carding; 5 years as overseer. Now employed but have good reasons for wishing to change. Address No. 3860.

WANT position as superintendent of weaving mill, or would take overseer weaving in large mill on plain or fancy goods. Now employed in good plant and can give good references. Fine record in good mills. Address No. 3861.

WANT position as overseer spinning, 17 years in spinning room, now employed as second hand in 35,000 spindle room; age 28, married, sober, reliable and church member. Good references. Address No. 3862.

WANT position as overseer spinning, spooling or twisting. Age 29, married, 10 years on spinning. Can furnish good reference. Address No. 3863.

WANT position as carder or spinner, or both. Age 55, married, practical carder and spinner and can furnish fine references as to character and ability. Address No. 3864.

WANT position as overseer spinning, or carding and spinning, can give good references as to character and ability, strictly sober now employed but have good reasons for wishing to change. Address No. 3865.

WANT position as overseer cloth room, experienced on drills and sheetings; also colored goods. Can give A1 references. Address No. 3867.

WANT position as carder or spinner, or both. Experienced and reliable man, who can produce good results. Good references. Address No. 3868.

WANT position as superintendent, now employed as such, but wish to change; 4 years in present place, 8 years as carder and spinner or both warp and hosiery yarns, 5 years as spinner, been in mill over 25 years, thoroughly understand all processes from picker room to winding and twisting. Good knowledge of steam and electricity. Address No. 3869.

WANT position as overseer spinner, at $30 weekly or more, now employed in good mill, practical and experienced man. Best of references. Address No. 3870.

WANT position as superintendent or weaver; long practical experience, and can produce quality and quantity production. Address No. 3871.

WANT position as overseer weaving; 12 years on heavy duck, 14 years as overseer on sheetings, drill, osbaurgs, grain bag, tubing and rope machines; am 48. Can change on short notice. Good references. Address No. 3872.

WANT position as overseer weaving, experienced on large variety of goods and can handle room on efficient basis. Address No. 3873.

WANT position as superintendent of small mill, or weaver in large plant; now employed as overseer slashing, warping and drawing-in on 360 Draper looms. Good references. Address No. 3874.

WANT position as superintendent, yarn or weave mill. Now employed, but wish larger place Excellent past record. Good references. Address No. 3875.

WANT position as agent superintendent or manager of Southern mill on white work. Would be interested in buying stock. Can furnish best of references and can show results. Address No. 3876.

WANT position as overseer weaving, now running 800 looms and giving satisfaction; familiar with colored checks, chambrays, many other lines; age 39, married, good references. Address No. 3877

WANT position as overseer weaving; age 29, married, I. C. A. graduate, experienced on plain and fine work including all kinds of cotton towels and specialties. Good references. Address No. 3879.

WANT position as superintendent; 28 years experience in mill, have held present place as superintendent for 8 years, have good reasons for wanting to change. Best of references. Address No. 3880.

WANT position as supt. of yarn mil, or carder and spinner. Now employed as carder. Can furnish good references to show my record. Address No. 3881.

WANT position as carder in large mill, or supt. of small yarn mill; 20 years as carder and spinned; mostly in carding and assistant supt. Now employed as carder and assistant supt. Good references. Address No. 3882.

WANT position as carder or spinner, or both. Practical man of long experience; have excellent references. Address No. 3882.

WANT position as supt. or weaver, long experience in good mills, excellent references to show character and ability. Address No. 3883.

WANT position as supt. of spinning mill, practical experienced man of good ability and can get results. Address No. 3884.

WANT position as supt. and manager of small or medium mill, or overseer of large, good paying weave room. Excellent references. Address No. 3885.

WANT position as master mechanic; 20 years experience, now employed, good references to show excellent past record. Addrss. No. 3886.

WANT position as carder and spinner or both, or supt.; 25 years in mill, 18 as supt.; married, have family. Address No. 3887.

WANT position as spinner, white work preferred; experienced and reliable man. Can come on short notice. Best of references. Address No. 3888.

WANT position as overseer of spinning, now employed as such and giving satisfaction, but wish larger place. Married, good habits, reliable and competent. Good references. Address No. 3889.

WANT position as overseer spinning. Experienced spinner, practical and capable, good character and habits, best of references. Address No. 3890.

WANT position as supt. or would take carding or spinning. Good references to show an excellent past record and can product good results. Address No. 3891.

WANT position as carder or spinner in large mill, or supt. of small or medium size mill. Long experience in good mills; good manager of help. First class references. Address No. 3892.

WANT position as supt. of small mill, with opportunity of investing in mill and advance. Long experience as overseer, good character, inventor and owner of patent that will be of great value to mill equipped to use waste sock. Patent would give mill big advantage in manufacture of twine, rope and similar products. Would take stock for entire amount of pattern and invest small amount in addition, or would consider new mill. Address No. 3893.

WANT position as master mechanic. Long experience on both steam and electric work, 14 years in mill shops, good references. Address No. 3895.

WANT position as supt., assistant supt., carder or spinner, mule or ring frames, good man of long experience, best of references. Address No 3894.

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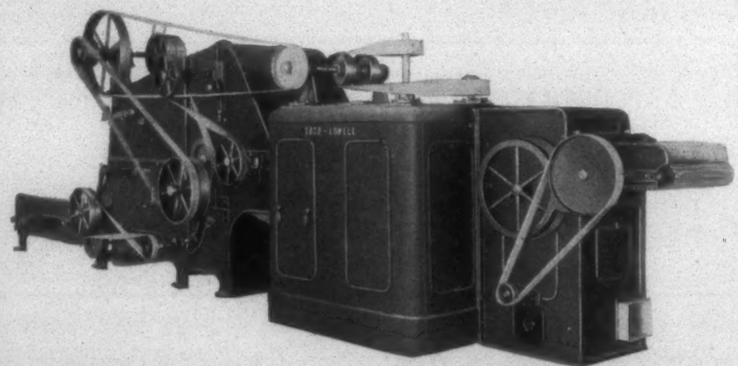

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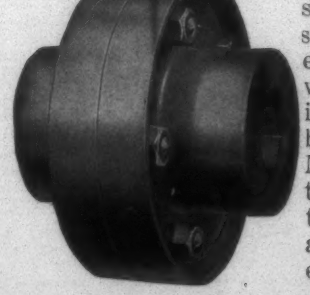

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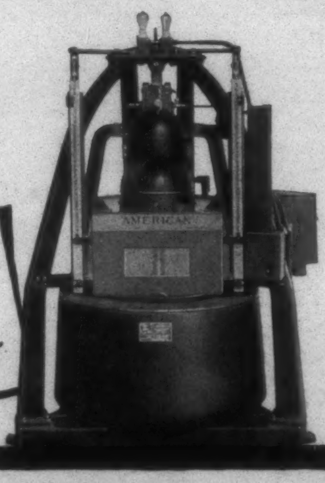

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